



SAMSUNG ELECTRONICS Co., Ltd.

2020 Half-year Business Report

For the quarter ended June 30, 2020

Certain statements in the document, other than purely historical information, including estimates, projections, statements relating to our business plans, objectives and expected operating results, and the assumptions upon which those statements are based, are “forward-looking statements.” Forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties which may cause actual results to differ materially from the forward-looking statements. A detailed discussion of risks and uncertainties that could cause actual results and events to differ materially from such forward-looking statements is included in our financial reports available on our website.

See, also, 『Note on Forward-Looking Statements』 in preamble of 『II. Business Overview』.

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Certification

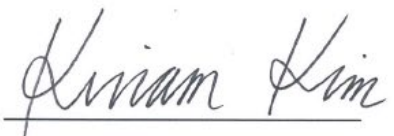
Letter of Certification

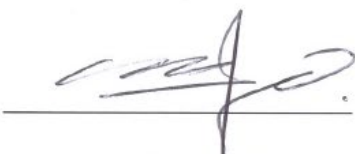
We, Ki-nam Kim and Yoon-ho Choi, as a CEO and the executive in charge of reporting, respectively, certify that we have thoroughly reviewed the half-year business report of Samsung Electronics Co., Ltd.

Based on our knowledge, this report does not contain any untrue statements of material facts or omit any material facts; and it does not contain any statements that are intentionally misleading for the users of the information in the report.

We confirm that Samsung Electronics operates the Internal Controls over Financial Reporting, as defined in Article 8 of the Act on External Audit of Stock Companies.

Date: August 14, 2020

Ki-nam Kim 
Vice Chairman and CEO
Samsung Electronics Co., Ltd.

Executive responsible for reporting: Yoon-ho Choi 
President and CFO
Samsung Electronics Co., Ltd.

I. Corporate Overview

1. Overview

A. Legal, commercial name:

- Samsung Electronics Co., Ltd.

B. Date of establishment:

- Samsung Electronics Co., Ltd. (“SEC” or “the Company”) was established as Samsung Electronics Industry Co., Ltd. on January 13, 1969, and held an initial public offering on June 11, 1975.
- SEC changed its name from Samsung Electronics Industry Co., Ltd. to Samsung Electronics Co., Ltd. following a resolution passed at the Annual General Meeting (AGM) of shareholders on February 28, 1984.

C. Address, phone number, and English language website of the corporate headquarters

- Address: 129, Samsung-ro, Yeongtong-gu, Suwon, Gyeonggi-do, Korea
- Phone Number: 82-31-200-1114
- Website: <https://www.samsung.com/sec>

D. The Company is not subject to Article 2 of the Framework Act on Small and Medium Enterprises.

E. Core businesses

- The Company (defined below) consists of business divisions that operate independently: CE (Consumer Electronics); IM (Information Technology & Mobile Communications); DS (Device Solutions); and Harman (Harman International Industries, Inc. and its subsidiaries), which produces automotive electronics components.

Products in each Division are presented below:

Division	Products
CE	TVs, monitors, refrigerators, washing machines, air conditioners, etc.
IM	HHPs, network systems, computers, etc.
DS	DRAM, NAND flash, mobile APs, OLED smartphone panels, LCD TV panels, etc.
Harman	Digital cockpits, telematics, speakers, etc.

SEC is a global electronics firm comprised of the headquarters in Korea and 244 subsidiaries (collectively, “Samsung Electronics” or the “Company”) across the world, including 9 regional headquarters for the CE and IM Divisions, 5 regional headquarters for the DS Division, and Harman’s subsidiaries.

[CE Division]

The CE Division is satisfying customers’ needs and leading the global digital era by continuously offering new products featuring innovative technology, unique designs, and enhanced value propositions.

TV is the core product of CE. The Company has maintained its position as the market leader for 14 consecutive years by leveraging competitive advantages in hardware such as LCD/LED TVs as well as software driven product features within our Smart TV product portfolio. We will continue to expand our market leadership based on our competitive edge in the premium segment through our 8K QLED and ultra-large products to name a few.

[IM Division]

The IM Division operates the Mobile Communication Business, which produces and sells smart mobile devices such as smartphones, tablets, and wearables. For smartphones, a key product of the business, we have developed a lineup ranging from low-end right through to premium models, and have achieved growth in both advanced and emerging markets with the Galaxy series.

We will lead growth of the smartphone market and deliver exceptional user experiences by: 1) offering innovative hardware features such as new form factors (based on flexible OLED technology), high-definition cameras, biometric sensors, and battery charger technologies; 2) improving software capabilities of mobile payment service Samsung Pay and AI platform Bixby; and 3) investing in future growth drivers such as Cloud, IoT, healthcare, AR, and VR. At the same time, we will lead the global 5G market based on our end-to-end solutions, which encompass handsets, chipsets, as well as our commercialization experience in initial 5G markets.

[DS Division]

The Memory Business, System LSI Business, Foundry Business, and Display Panel (“DP”) Business make up the DS Division. The Memory Business manufactures and sells DRAM and NAND products; the System LSI Business designs and sells mobile application processors (“mobile APs” or “APs”) and camera sensor chips; the Foundry Business is in charge of consignment production of semiconductors; and the DP Business manufactures and sells display panels.

The Company constantly works to increase its influence on end-product manufacturers and create new demand through technological breakthroughs and the development of high quality components as it has done with APs—which serve as the brains of mobile products—and with memory components like DRAM via enhanced capacity and density.

The Memory Business has maintained its position at the top of the global memory market by sustaining cost competitiveness and applying the latest advanced process technology in each technological iteration. The System LSI Business has not been complacent, expanding its focus from mobile to include automotive chips, and will stay at the forefront of the market by offering differentiated products such as APs and CISs and strengthening competitiveness via its advanced manufacturing process technology. In 2019, the Foundry Business introduced the world’s first 7-nano product manufactured with EUV technology. Leveraging its capabilities, the business will gain market leadership in 2020 with 4- and 5-nano EUV processes and timely development of next-generation technologies such as 3-nano process using GAA (gate-all-around) technology. We are expanding the business by diversifying our product portfolio, which includes CISs, DDIs, and PMICs.

In the Display division, the mobile panel business’s differentiated technology is a main factor behind the increased adoption of OLED panels, while its release of products in new applications—such as foldable devices, laptops, and automotives—has expanded the overall market. Meanwhile, the large panel business is focusing on premium products such as high-definition, ultra-large, QD TVs and is enhancing its competitiveness through continuous improvements in technology and productivity.

[Harman Division]

Harman designs and develops connected products and solutions for automakers, consumers, and companies worldwide and is a global leader in the market for connected car systems, audio and visual products, professional solutions, and connected services. Harman has established an internationally renowned brand and employs both internal development and strategic acquisitions to expand its lineup of quality products.

☞ See 『II. Businesses Overview』, for more details about each Division.

F. Affiliates

SEC is an affiliate of the Samsung Group as defined under Korea’s Monopoly Regulation and Fair Trade Act (“Samsung Group”).

As of June 30, 2020, the Samsung Group had a total of 59 domestic affiliates following a reduction of an affiliate—Natural9—since December 31, 2019. Among the Samsung Group’s domestic affiliates, 16 affiliates (including Samsung Electronics) are listed and 43 are unlisted.

[As of Jun 30, 2020]

Type	Number	Affiliate
Listed	16	Samsung C&T; Samsung Electronics; Samsung SDI; Samsung Electro-Mechanics (Semco); Samsung Fire & Marine Insurance; Samsung Heavy Industries; Samsung Life Insurance; Multicampus; Samsung Securities; Samsung SDS; Samsung Card; Samsung Engineering; S1; Cheil Worldwide; Hotel Shilla; Samsung Biologics
Unlisted	43	Seoul Lakeside CC; Samwoo Architects & Engineers; CVnet Corporation; Samsung Bioepis; Samsung Display; Samsung Corning Advanced Glass; SU Materials; STECO; SEMES; Samsung Electronics Service; Samsung Electronics Sales; Samsung Electronics Logitech; Suwon Samsung Bluewings FC; Samsung Medison; Samsung Claim Adjustment Service; Samsung Fire & Marine Insurance Service; Samsung Fire & Marine Insurance Financial Service; Samsung Electronics Service CS; Samsung Futures; Samsung Asset Management; Samsung Life Service; Samsung SRA Asset Management; Samsung Life Financial Service; SD Flex; Cheil Fashion Retail Co., Ltd.; Samsung Welstory; SECUI; STM; S-Core; OpenHands; Miracom; Samsung Card Customer Service; Human TSS; S-1CRM; Shilla Stay; HDC Shilla Duty Free Ltd; Samsung Economic Research Institute (SERI); Samsung Lions; Samsung Venture Investment Corporation; Samsung Active Asset Management; Samsung Hedge Asset Management; Harman International Korea; SBTM
Total	59	

☞ See 『IX. Affiliates and Subsidiaries』 for more details about domestic and overseas affiliates.

G. Subsidiaries subject to consolidated financial statements

As of June 30, 2020, Samsung Electronics' consolidated subsidiaries numbered 244 with the addition of 5 subsidiaries and reduction of 1 subsidiary when compared to totals as of December 31, 2019. Below is the list of consolidated subsidiaries.

[As of Jun 30, 2020]

(KRW mil)

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics America, Inc. (SEA)	Jul 1978	Electronic goods sales	34,704,039	Over 50%	Y
NeuroLogica Corp.	Feb 2004	Medical equipment	198,668	Over 50%	Y
Dacor Holdings, Inc.	Dec 1998	Subsidiary management (overseas)	70,283	Over 50%	N
Dacor, Inc.	Mar 1965	Home appliance production and sales	70,214	Over 50%	N
Dacor Canada Co.	Jun 2001	Home appliance sales	9	Over 50%	N
EverythingDacor.com, Inc.	Jun 2006	Home appliance sales	0	Over 50%	N
Distinctive Appliances of California, Inc.	Jun 2014	Home appliance sales	0	Over 50%	N
Samsung HVAC America, LLC	Jul 2001	Air conditioner sales	53,411	Over 50%	N
SmartThings, Inc.	Apr 2012	Smart home platform	188,239	Over 50%	Y
Samsung Oak Holdings, Inc. (SHI)	Jun 2016	Subsidiary management (overseas)	396,858	Over 50%	Y
Stellus Technologies, Inc.	Nov 2015	Semiconductor system production and sales	22,442	Over 50%	N
Joyent, Inc.	Mar 2005	Cloud services	208,093	Over 50%	Y
TeleWorld Solutions, Inc. (TWS)	May 2002	Network equipment installation and optimization	10,299	Over 50%	N
TWS LATAM B, LLC	Jul 2019	Subsidiary management (overseas)	0	Over 50%	N
TWS LATAM S, LLC	Jul 2019	Subsidiary management (overseas)	0	Over 50%	N
SNB Technologies, Inc. Mexico, S.A. de C.V	Oct 2019	Network equipment installation and optimization	0	Over 50%	N
Prismview, LLC	Oct 2007	LED display panel production and sales	91,430	Over 50%	Y
Samsung Research America, Inc. (SRA)	Oct 1988	R&D	807,624	Over 50%	Y
Samsung Next LLC (SNX)	Aug 2016	Subsidiary management (overseas)	115,785	Over 50%	Y
Samsung Next Fund LLC (SNXF)	Aug 2016	Venture firm and new technology investments	125,312	Over 50%	Y
Viv Labs, Inc.	Sep 2012	Artificial Intelligence services	281,556	Over 50%	Y
Samsung Semiconductor, Inc. (SSI)	Jul 1983	Semiconductor and display panel sales	9,194,190	Over 50%	Y
Samsung Austin Semiconductor LLC. (SAS)	Feb 1996	Semiconductor production	6,437,865	Over 50%	Y
Samsung International, Inc. (SII)	Oct 1983	Electronic goods production	1,191,534	Over 50%	Y
Samsung Mexicana S.A. de C.V (SAMEX)	Mar 1988	Electronic goods production	55,259	Over 50%	N
Samsung Electronics Home Appliances America, LLC (SEHA)	Aug 2017	Home appliance production	663,997	Over 50%	Y
SEMES America, Inc.	Oct 1998	Semiconductor equipment	1,731	Over 50%	N
Zhilabs Inc.	Feb 2017	Network solution sales	174	Over 50%	N
Samsung Electronics Canada, Inc. (SECA)	Jul 1980	Electronic goods sales	1,396,008	Over 50%	Y
AdGear Technologies Inc.	Aug 2010	Digital advertising platform	34,696	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
SigMast Communications Inc.	Jul 2009	Text messaging service development	4,933	Over 50%	N
Samsung Electronics Mexico S.A. De C.V. (SEM)	Jul 1995	Electronic goods sales	1,250,456	Over 50%	Y
Samsung Electronics Digital Appliance Mexico, SA de CV (SEDAM)	Dec 2012	Home appliance production	521,891	Over 50%	Y
Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	May 1995	Electronic goods sales	350,117	Over 50%	Y
Samsung Electronics Latinoamerica (Zona Libre), S. A. (SELA)	Apr 1989	Electronic goods sales	487,605	Over 50%	Y
Samsung Electronics Venezuela, C.A. (SEVEN)	May 2010	Marketing and services	91	Over 50%	N
Samsung Electronica Colombia S.A. (SAMCOL)	Mar 1997	Electronic goods sales	567,003	Over 50%	Y
Samsung Electronics Panama. S.A. (SEPA)	Jul 2012	Consulting	1,981	Over 50%	N
Samsung Electronica da Amazonia Ltda. (SEDA)	Jan 1995	Electronic goods production and sales	7,058,719	Over 50%	Y
Samsung Electronics Argentina S.A. (SEASA)	Jun 1996	Marketing and services	46,405	Over 50%	N
Samsung Electronics Chile Limitada (SECH)	Dec 2002	Electronic goods sales	497,328	Over 50%	Y
Samsung Electronics Peru S.A.C. (SEPR)	Apr 2010	Electronic goods sales	310,900	Over 50%	Y
Harman International Industries, Inc.	Jan 1980	Subsidiary management (overseas)	15,780,810	Over 50%	Y
Harman Becker Automotive Systems, Inc.	Jun 1981	Audio product R&D, production, and sales	4,389,303	Over 50%	Y
Harman Connected Services, Inc.	Feb 2002	Connected service provider	2,081,187	Over 50%	Y
Harman Connected Services Engineering Corp.	Sep 2004	Connected service provider	620	Over 50%	N
Harman Connected Services South America S.R.L.	Apr 2015	Connected service provider	0	Over 50%	N
Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Jul 2005	Audio product production and sales	53,652	Over 50%	N
Harman de Mexico, S. de R.L. de C.V.	Feb 1997	Audio product production	107,312	Over 50%	Y
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Nov 1958	Audio product R&D and sales	253,503	Over 50%	Y
Harman Financial Group LLC	Jun 2004	Management company	654,120	Over 50%	Y
Harman International Industries Canada Ltd.	May 2005	Audio product sales	78	Over 50%	N
Harman International Mexico, S. de R.L. de C.V.	Dec 2014	Audio product sales	28,262	Over 50%	N
Harman KG Holding, LLC	Mar 2009	Subsidiary management (overseas)	0	Over 50%	N
Harman Professional, Inc.	Jul 2006	Audio product R&D and sales	1,097,748	Over 50%	Y
RT SV Co-Invest, LP	Feb 2014	Venture firm investments	12,220	Over 50%	N
Beijing Integrated Circuit Industry International Fund, L.P	Dec 2014	Venture firm investments	27,097	Over 50%	N
China Materialia New Materials 2016 Limited Partnership	Sep 2017	Venture firm investments	3,391	Over 50%	N
Samsung Electronics (UK) Ltd. (SEUK)	Jul 1995	Electronic goods sales	2,644,358	Over 50%	Y
Samsung Electronics Ltd. (SEL)	Jan 1999	Subsidiary management (overseas)	6,672	Over 50%	N
Samsung Electronics Holding GmbH (SEHG)	Feb 1982	Subsidiary management (overseas)	844,742	Over 50%	Y
Samsung Semiconductor Europe GmbH (SSEG)	Dec 1987	Semiconductor and display panel sales	853,543	Over 50%	Y
Samsung Electronics GmbH (SEG)	Dec 1984	Electronic goods sales	2,258,269	Over 50%	Y
Samsung Electronics Iberia, S.A. (SESA)	Jan 1989	Electronic goods sales	1,117,384	Over 50%	Y
Samsung Electronics France S.A.S (SEF)	Jan 1988	Electronic goods sales	1,738,061	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	Oct 1989	Electronic goods production and sales	2,109,654	Over 50%	Y
Samsung Electronics Czech and Slovak s.r.o. (SECZ)	Jan 2010	Electronic goods sales	244,072	Over 50%	Y
Samsung Electronics Italia S.P.A. (SEI)	Apr 1991	Electronic goods sales	1,310,500	Over 50%	Y
Samsung Electronics Europe Logistics B.V. (SELS)	May 1991	Logistics	2,027,213	Over 50%	Y
Samsung Electronics Benelux B.V. (SEBN)	Jul 1995	Electronic goods sales	1,914,864	Over 50%	Y
Samsung Display Slovakia s.r.o. (SDSK)	Mar 2007	Display panel processing	50,097	Over 50%	N
Samsung Electronics Romania LLC (SEROM)	Sep 2007	Electronic goods sales	290,743	Over 50%	Y
Samsung Electronics Polska, SP.Zo.o (SEPOL)	Apr 1996	Electronic goods sales	909,905	Over 50%	Y
Samsung Electronics Portuguesa S.A. (SEP)	Sep 1982	Electronic goods sales	212,856	Over 50%	Y
Samsung Electronics Nordic Aktiebolag (SENA)	Mar 1992	Electronic goods sales	1,246,502	Over 50%	Y
Samsung Semiconductor Europe Limited (SSEL)	Apr 1997	Semiconductor and display panel sales	93,207	Over 50%	Y
Samsung Electronics Austria GmbH (SEAG)	Jan 2002	Electronic goods sales	423,105	Over 50%	Y
Samsung Electronics Switzerland GmbH (SESG)	May 2013	Electronic goods sales	296,054	Over 50%	Y
Samsung Electronics Slovakia s.r.o (SESK)	Jun 2002	TV and monitor production	1,324,355	Over 50%	Y
Samsung Electronics Baltics SIA (SEB)	Oct 2001	Electronic goods sales	136,426	Over 50%	Y
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	Oct 2008	Subsidiary management (overseas)	10,682,847	Over 50%	Y
Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	Feb 2010	Home appliance production	423,582	Over 50%	Y
Samsung Electronics Greece S.M.S.A (SEGR)	Apr 2010	Electronic goods sales	98,718	Over 50%	Y
Samsung Electronics Air Conditioner Europe B.V. (SEACE)	Apr 2017	Air conditioner sales	101,114	Over 50%	Y
Samsung Nanoradio Design Center (SNDC)	Feb 2004	R&D	27,519	Over 50%	N
Samsung Denmark Research Center ApS (SDRC)	Sep 2012	R&D	25,297	Over 50%	N
Samsung Cambridge Solution Centre Limited (SCSC)	Sep 2012	R&D	146,786	Over 50%	Y
Zhilabs, S.L.	Nov 2008	Network solution R&D and sales	6,745	Over 50%	N
Foodient Ltd.	Mar 2012	R&D	615	Over 50%	N
Samsung Electronics Overseas B.V. (SEO)	Jan 1997	Electronic goods sales	138,325	Over 50%	Y
Samsung Electronics Rus Company LLC (SERC)	Oct 2006	Electronic goods sales	1,460,307	Over 50%	Y
Samsung Electronics Ukraine Company LLC (SEUC)	Sep 2008	Electronic goods sales	283,864	Over 50%	Y
Samsung R&D Institute Rus LLC (SRR)	Nov 2011	R&D	58,600	Over 50%	N
Samsung Electronics Central Eurasia LLP (SECE)	Sep 2008	Electronic goods sales	179,203	Over 50%	Y
Samsung Electronics Caucasus Co. Ltd (SECC)	Oct 2014	Marketing	2,059	Over 50%	N
Samsung Electronics Rus Kaluga LLC (SERK)	Jul 2007	TV production	1,259,052	Over 50%	Y
AKG Acoustics GmbH	Mar 1947	Audio product production and sales	388,887	Over 50%	Y
AMX UK Limited	Mar 1993	Audio product sales	0	Over 50%	N
Arcam Limited	Jul 2004	Subsidiary management (overseas)	0	Over 50%	N
A&R Cambridge Limited	Dec 1993	Audio product sales	0	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Harman Audio Iberia Espana Sociedad Limitada	Nov 2012	Audio product sales	253	Over 50%	N
Harman Automotive UK Limited	Oct 2012	Audio product production	1,040,947	Over 50%	Y
Harman Becker Automotive Systems GmbH	Jul 1990	Audio product R&D, production, and sales	4,024,489	Over 50%	Y
Harman Becker Automotive Systems Italy S.R.L.	Dec 2005	Audio product sales	1,308	Over 50%	N
Harman Becker Automotive Systems Manufacturing Kft	Aug 1994	Audio product R&D and production	2,957,465	Over 50%	Y
Harman Belgium SA	Apr 1967	Audio product sales	2,786	Over 50%	N
Harman Connected Services AB.	Oct 1984	Connected service provider	23,739	Over 50%	N
Harman Finland Oy	Jul 1998	Connected service provider	2,194	Over 50%	N
Harman Connected Services GmbH	Dec 2005	Connected service provider	50,121	Over 50%	N
Harman Connected Services Limited	Dec 1992	Connected service provider	0	Over 50%	N
Harman Connected Services Poland Sp.zoo	Jun 2007	Connected service provider	10,263	Over 50%	N
Harman Connected Services UK Ltd.	Sep 2008	Connected service provider	67,264	Over 50%	N
Harman Consumer Nederland B.V.	Dec 1995	Audio product sales	447,732	Over 50%	Y
Harman Deutschland GmbH	Mar 1998	Audio product sales	16,296	Over 50%	N
Harman Finance International GP S.a.r.l	Apr 2015	Subsidiary management (overseas)	0	Over 50%	N
Harman France SNC	Nov 1995	Audio product sales	156,575	Over 50%	Y
Harman Holding GmbH & Co. KG	Jun 2002	Management company	5,282,405	Over 50%	Y
Harman Hungary Financing Ltd.	Jun 2012	Financing company	43,454	Over 50%	N
Harman Inc. & Co. KG	Jun 2012	Subsidiary management (overseas)	4,148,456	Over 50%	Y
Harman International Estonia OU	May 2015	R&D	224	Over 50%	N
Harman International Industries Limited	Mar 1980	Audio product R&D and sales	241,193	Over 50%	Y
Harman International Romania SRL	Feb 2015	R&D	26,319	Over 50%	N
Harman Finance International, SCA	Apr 2015	Financing company	471,168	Over 50%	Y
Harman International s.r.o	Feb 2015	Audio product production	20	Over 50%	N
Harman Management GmbH	Apr 2002	Subsidiary management (overseas)	0	Over 50%	N
Harman Professional Kft	Dec 2014	Audio product R&D and production	97,517	Over 50%	Y
Martin Manufacturing (UK) Ltd	May 1985	Audio product production	0	Over 50%	N
Harman Professional Denmark ApS	Jul 1987	Audio product R&D and sales	165,264	Over 50%	Y
Red Bend Software Ltd.	Aug 2004	Software design	0	Over 50%	N
Red Bend Software SAS	Oct 2002	Software design	8,088	Over 50%	N
Studer Professional Audio GmbH	Nov 2003	Audio product R&D and sales	27,928	Over 50%	N
Harman Connected Services OOO	Nov 1998	Connected service provider	13,875	Over 50%	N
Harman RUS CIS LLC	Aug 2011	Audio product sales	135,093	Over 50%	Y
Samsung Electronics West Africa Ltd. (SEWA)	Mar 2010	Marketing	32,923	Over 50%	N
Samsung Electronics East Africa Ltd. (SEEA)	Dec 2011	Marketing	26,929	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Gulf Electronics Co., Ltd. (SGE)	May 1995	Electronic goods sales	1,288,180	Over 50%	Y
Samsung Electronics Saudi Arabia Ltd. (SESAR)	Nov 2019	Electronic goods sales	23,055	Over 50%	N
Samsung Electronics Egypt S.A.E (SEEG)	Jul 2012	Electronic goods production and sales	642,091	Over 50%	Y
Samsung Electronics Israel Ltd. (SEIL)	Sep 2012	Marketing	17,993	Over 50%	N
Samsung Electronics Tunisia S.A.R.L (SETN)	Sep 2012	Marketing	4,553	Over 50%	N
Samsung Electronics Pakistan(Private) Ltd. (SEPAK)	Nov 2012	Marketing	2,913	Over 50%	N
Samsung Electronics South Africa(Pty) Ltd. (SSA)	Jun 1994	Electronic goods sales	522,382	Over 50%	Y
Samsung Electronics South Africa Production (pty) Ltd. (SSAP)	Jul 2014	TV and monitor production	81,784	Over 50%	Y
Samsung Electronics Turkey (SETK)	Dec 1984	Electronic goods sales	566,676	Over 50%	Y
Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	Oct 2007	R&D	78,746	Over 50%	Y
Samsung Electronics Levant Co.,Ltd. (SELV)	Jul 2009	Electronic goods sales	484,098	Over 50%	Y
Samsung Electronics Maghreb Arab (SEMAG)	Nov 2009	Electronic goods sales	240,938	Over 50%	Y
Corephotonics Ltd.	Jan 2012	R&D	11,884	Over 50%	N
Global Symphony Technology Group Private Ltd.	Jan 2002	Subsidiary management (overseas)	42,327	Over 50%	N
Harman Connected Services Morocco	Apr 2012	Connected service provider	2,353	Over 50%	N
Harman Industries Holdings Mauritius Ltd.	Oct 2009	Subsidiary management (overseas)	85,666	Over 50%	Y
Red Bend Ltd.	Feb 1998	Audio product production	89,221	Over 50%	Y
Samsung Japan Corporation (SJC)	Dec 1975	Semiconductor and display panel sales	1,218,011	Over 50%	Y
Samsung R&D Institute Japan Co. Ltd. (SRJ)	Aug 1992	R&D	161,026	Over 50%	Y
Samsung Electronics Japan Co., Ltd. (SEJ)	Sep 2008	Electronic goods sales	976,240	Over 50%	Y
Samsung Electronics Display (M) Sdn. Bhd. (SDMA)	Mar 1995	Electronic goods production	25,824	Over 50%	N
Samsung Electronics (M) Sdn. Bhd. (SEMA)	Sep 1989	Home appliance production	189,418	Over 50%	Y
Samsung Vina Electronics Co., Ltd. (SAVINA)	Jan 1995	Electronic goods sales	292,458	Over 50%	Y
Samsung Asia Private Ltd. (SAPL)	Jul 2006	Electronic goods sales	9,137,262	Over 50%	Y
Samsung India Electronics Private Ltd. (SIEL)	Aug 1995	Electronic goods production and sales	7,042,872	Over 50%	Y
Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)	May 2005	R&D	383,411	Over 50%	Y
Samsung Nepal Services Pvt, Ltd (SNSL)	Nov 2017	Services	297	Over 50%	N
Samsung Display Noida Private Limited (SDN)	Jul 2019	Display panel production	5,276	Over 50%	N
Samsung Electronics Australia Pty. Ltd. (SEAU)	Nov 1987	Electronic goods sales	468,812	Over 50%	Y
Samsung Electronics New Zealand Limited (SENZ)	Sep 2013	Electronic goods sales	104,271	Over 50%	Y
PT Samsung Electronics Indonesia (SEIN)	Aug 1991	Electronic goods production and sales	1,014,085	Over 50%	Y
PT Samsung Telecommunications Indonesia (STIN)	Mar 2003	Electronic goods sales and services	1,075	Over 50%	N
Thai Samsung Electronics Co., Ltd. (TSE)	Oct 1988	Electronic goods production and sales	2,912,731	Over 50%	Y
Laos Samsung Electronics Sole Co., Ltd (LSE)	Sep 2016	Marketing	774	Over 50%	N
Samsung Electronics Philippines Corporation (SEPCO)	Mar 1996	Electronic goods sales	285,358	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Display Vietnam Co., Ltd. (SDV)	Jul 2014	Display panel production	7,267,124	Over 50%	Y
Samsung Malaysia Electronics (SME) Sdn. Bhd. (SME)	May 2003	Electronic goods sales	412,503	Over 50%	Y
Samsung R&D Institute BanglaDesh Limited (SRBD)	Aug 2010	R&D	12,224	Over 50%	N
Samsung Electronics Vietnam Co., Ltd. (SEV)	Mar 2008	Electronic goods production	12,367,857	Over 50%	Y
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	Mar 2013	Telecom product production	13,847,934	Over 50%	Y
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	Feb 2015	Electronic goods production and sales	2,305,587	Over 50%	Y
Harman Connected Services Corp. India Pvt. Ltd.	Apr 2002	Connected service provider	356,371	Over 50%	Y
Harman International (India) Private Limited	Jan 2009	Audio product R&D and sales	239,982	Over 50%	Y
Harman International Industries PTY Ltd.	Dec 2014	Subsidiary management (overseas)	0	Over 50%	N
Harman International Japan Co., Ltd.	Jun 1991	Audio product R&D and sales	86,606	Over 50%	Y
Harman Singapore Pte. Ltd.	Aug 2007	Audio product sales	12,806	Over 50%	N
Samsung Display Dongguan Co., Ltd. (SDD)	Nov 2001	Display panel production	1,795,077	Over 50%	Y
Samsung Display Tianjin Co., Ltd. (SDT)	Jun 2004	Display panel production	1,285,173	Over 50%	Y
Samsung Electronics Hong Kong Co., Ltd. (SEHK)	Sep 1988	Electronic goods sales	1,173,330	Over 50%	Y
Suzhou Samsung Electronics Co., Ltd. (SSEC)	Apr 1995	Home appliance production	524,526	Over 50%	Y
Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	Apr 1995	Home appliance production	456,052	Over 50%	Y
Samsung (CHINA) Investment Co., Ltd. (SCIC)	Mar 1996	Electronic goods sales	14,637,222	Over 50%	Y
Samsung Mobile R&D Center China- Guangzhou (SRC-Guangzhou)	Jan 2010	R&D	84,371	Over 50%	Y
Samsung Tianjin Mobile Development Center (SRC-Tianjin)	Aug 2010	R&D	15,889	Over 50%	N
Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	Mar 2013	R&D	29,785	Over 50%	N
Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	Dec 1994	Semiconductor processing	1,094,799	Over 50%	Y
SEMES (XIAN) Co., Ltd.	Jul 2013	Semiconductor equipment	1,760	Over 50%	N
Samsung Electronics Huizhou Co., Ltd. (SEHZ)	Dec 1992	Electronic goods production	1,364,967	Over 50%	Y
Tianjin Samsung Electronics Co., Ltd. (TSEC)	Apr 1993	TV and monitor production	615,753	Over 50%	Y
Samsung Electronics Taiwan Co., Ltd. (SET)	Nov 1994	Electronic goods sales	1,186,764	Over 50%	Y
Beijing Samsung Telecom R&D Center (SRC-Beijing)	Sep 2000	R&D	127,668	Over 50%	Y
Tianjin Samsung Telecom Technology Co., Ltd. (TSTC)	Mar 2001	Telecom product production	579,435	Over 50%	Y
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Oct 2001	Semiconductor and display panel sales	5,880,616	Over 50%	Y
Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	Sep 2002	Electronic goods production	995,499	Over 50%	Y
Samsung Suzhou Module Co., Ltd. (SSM)	Sep 2002	Display panel production	1,069,463	Over 50%	Y
Samsung Suzhou LCD Co., Ltd. (SSL)	Jul 2011	Display panel production	1,808,262	Over 50%	Y
Shenzhen Samsung Electronics Telecommunication Co., Ltd. (SSET)	Feb 2002	Telecom product production	41,077	Over 50%	N
Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	Apr 2003	R&D	45,272	Over 50%	N
Samsung Electronics China R&D Center (SRC-Nanjing)	May 2004	R&D	65,312	Over 50%	N
Samsung (China) Semiconductor Co., Ltd. (SCS)	Sep 2012	Semiconductor production	12,370,070	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung SemiConductor Xian Co., Ltd. (SSCX)	Apr 2016	Semiconductor and display panel sales	2,091,092	Over 50%	Y
Tianjin Samsung LED Co., Ltd. (TSLED)	May 2009	LED production	478,477	Over 50%	Y
Harman (China) Technologies Co., Ltd.	Mar 2011	Audio product production	157,446	Over 50%	Y
Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	Mar 2013	Audio product sales	7,918	Over 50%	N
Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	Sep 2006	Audio product R&D and production	253,125	Over 50%	Y
Harman Commercial (Shanghai) Co., Ltd.	Oct 2010	Audio product sales	943	Over 50%	N
Harman Connected Services Solutions (Chengdu) Co., Ltd.	Aug 2007	Connected service provider	17,274	Over 50%	N
Harman Holding Limited	May 2007	Audio product sales	501,276	Over 50%	Y
Harman International (China) Holdings Co., Ltd.	Jun 2009	Audio product R&D and sales	531,409	Over 50%	Y
Harman Technology (Shenzhen) Co., Ltd.	Sep 2004	Audio product R&D and sales	46,032	Over 50%	N
Samsung Display	Apr 2012	Display panel production and sales	46,543,974	Over 50%	Y
SU Materials	Aug 2011	Display panel component production	32,160	Over 50%	N
STECO	Jun 1995	Semiconductor component production	169,173	Over 50%	Y
SEMES	Jan 1993	Semiconductor/FPD manufacturing equipment	1,335,871	Over 50%	Y
Samsung Electronics Service	Oct 1998	Electronics goods repair services	445,898	Over 50%	Y
Samsung Electronics Service CS	Oct 2018	Customer management services	19,624	Over 50%	N
Samsung Electronics Sales	Jul 1996	Electronic goods sales	1,061,489	Over 50%	Y
Samsung Electronics Logitech	Apr 1998	Total logistics services	218,240	Over 50%	Y
Samsung Medison	Jul 1985	Medical device production and sales	361,483	Over 50%	Y
Mirero System	Jan 1994	Semiconductor software development and supply	27,232	Over 50%	N
Dowoo Insys	Mar 2010	Display panel component production	26,129	Over 50%	N
GF Co., Ltd.	Oct 2015	Display panel component production	3,718	Over 50%	N
Harman Korea	Jan 2005	Semiconductor software development and supply	18,542	Over 50%	N
SVIC #21 Venture Capital Union	Nov 2011	Venture firm and new technology investments	95,135	Over 50%	Y
SVIC #22 Venture Capital Union	Nov 2011	Venture firm and new technology investments	119,689	Over 50%	Y
SVIC #26 Venture Capital Union	Nov 2014	Venture firm and new technology investments	134,421	Over 50%	Y
SVIC #27 Venture Capital Union	Sep 2014	Venture firm and new technology investments	42,486	Over 50%	N
SVIC #28 Venture Capital Union	Feb 2015	Venture firm and new technology investments	322,277	Over 50%	Y
SVIC #29 Venture Capital Union	Apr 2015	Venture firm and new technology investments	57,285	Over 50%	N
SVIC #32 Venture Capital Union	Aug 2016	Venture firm and new technology investments	227,750	Over 50%	Y
SVIC #33 Venture Capital Union	Nov 2016	Venture firm and new technology investments	188,559	Over 50%	Y
SVIC #37 Venture Capital Union	Nov 2017	Venture firm and new technology investments	23,454	Over 50%	N
SVIC #40 Venture Capital Union	Jun 2018	Venture firm and new technology investments	14,581	Over 50%	N
SVIC #42 Venture Capital Union	Nov 2018	Venture firm and new technology investments	4,939	Over 50%	N
SVIC #43 Venture Capital Union	Dec 2018	Venture firm and new technology investments	2,632	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
SVIC #45 Venture Capital Union	May 2019	Venture firm and new technology investments	19,097	Over 50%	N
SVIC #48 Venture Capital Union	Dec 2019	Venture firm and new technology investments	51,038	Over 50%	N
Private Equity Fund for Semiconductor Growth	Mar 2017	Semiconductor investments	75,397	Over 50%	Y
Private Equity Fund for Co-existence of System Semiconductor Firms	Apr 2020	Semiconductor investments	-	Over 50%	N

Companies with over KRW 75 billion in total assets as of December 31, 2019 are classified as major subsidiaries.

See 『II. Businesses Overview』 for additional information about major business segments.

(Changes in subsidiaries)

	Americas	Europe/ MEA/CIS	Asia ¹⁾	China	Domestic	Total	Increase	Decrease
Dec 31, 2017	63	109	38	38	22	270		
Dec 31, 2018	56	100	35	36	25	252	<p>[Americas: 1] Zhilabs Inc.</p> <p>[Europe/CIS/MEA: 1] Zhilabs, S.L.</p> <p>[Domestic: 4] SVIC #40 Venture Capital Union SVIC #42 Venture Capital Union SVIC #43 Venture Capital Union Samsung Electronics Service CS</p>	<p>[Americas: 8] NexusDX, Inc. S1NN USA, Inc. Samsung Pay, Inc. Harman Connected Services Holding Corp. AMX LLC AMX Holding Corporation Southern Vision Systems, Inc Triple Play Integration LLC</p> <p>[Europe/CIS/MEA: 10] Joyent Ltd. Aditi Technologies Europe GmbH AMX GmbH Harman Professional Germany GmbH Endeleo Limited Harman Consumer Finland OY Harman Consumer Division Nordic ApS Inspiration Matters Limited Knight Image Limited R&D International BVBA</p> <p>[Asia: 3] Harman Malaysia Sdn. Bhd. Harman Connected Services Technologies Pvt. Ltd. INSP India Software Development Pvt. Ltd.</p> <p>[China: 2] Harman Connected Services Taiwan Inc. Harman Automotive InfoTech (Dalian) Co., Ltd.</p> <p>[Domestic: 1] SVIC #23 Venture Capital Union</p>
Dec 31 2019	54	94	30	34	28	240	<p>[Europe/CIS/MEA: 3] Foodient Ltd. Corephotonics Ltd. Saudi Arabia Ltd. (SESAR)</p> <p>[Asia: 1] Samsung Display Noida Private Limited(SDN)</p> <p>[Domestic: 4] SVIC #45 Venture Capital Union SVIC #48 Venture Capital Union Dowoo Insys GF Co., Ltd.</p>	<p>[Americas: 2] Harman Investment Group, LLC Red Bend Software Inc.</p> <p>[Europe/CIS/MEA: 9] Samsung France Research Center SARL(SFRC) Innoetics E.P.E. Duran Audio B.V. Harman International SNC Harman Professional France SAS BroadSense Ltd. iOnRoad Ltd iOnRoad Technologies Ltd Towersec Ltd.</p> <p>[Asia: 6] Harman Connected Services Japan Co., Ltd. Red Bend Software Japan Co., Ltd. Studer Japan Ltd. Harman International Singapore Pte. Ltd. AMX Products And Solutions Private Limited Samsung Medison India Private Ltd.(SMIN)</p> <p>[China: 2] Samsung Electronics (Beijing) Service Company Limited (SBSC) Harman Connected Services Solutions (Beijing) Co., Ltd.</p> <p>[Domestic: 1] Red Bend Software Inc.</p>
June 30 2020	58	94	29	34	29	244	<p>[Americas: 4] TeleWorld Solutions, Inc. (TWS) TWS LATAM B, LLC TWS LATAM S, LLC SNB Technologies, Inc. Mexico, S.A. de C.V</p> <p>[Domestic: 1] Private Equity Fund for Co-existence of System Semiconductor Firms</p>	<p>[Asia: 1] Martin Professional Pte. Ltd.</p>

¹⁾ Ex China

(1H20: Changes in subsidiaries)

Type	Name	Changes	Notes
Newly consolidated	TeleWorld Solutions, Inc. (TWS)	Acquired shares	-
	TWS LATAM B, LLC		Subsidiary of TWS
	TWS LATAM S, LLC		Subsidiary of TWS
	SNB Technologies, Inc. Mexico, S.A. de C.V		Subsidiary of TWS
	Private Equity Fund for Co-existence of System Semiconductor Firms	Established	-
No longer consolidated	Martin Professional Pte. Ltd.	Liquidated	-

H. Credit rating

SEC's credit rating is assessed by two external credit ratings agencies. As of June 30, 2020, SEC's credit ratings were Aa3 with a stable investment outlook as rated by Moody's (US); and AA- with a stable investment outlook as rated by S&P (US). S&P maintained its rating of AA- as of July 2020.

Securities	Date	Ratings	Credit rating agency	Note
Corporate bond (USD denominated; issued in 1997 and expire in 2027)	Feb 2018	A1	Moody's	Annual review
	Jun 2018	Aa3	Moody's	
	Jul 2018	AA-	S&P	
	Nov 2018	Aa3	Moody's	
	May 2019	Aa3	Moody's	
	Jul 2019	AA-	S&P	
	Aug 2019	Aa3	Moody's	

Credit rating range: Moody's (Aaa-C), S&P (AAA-D)

[Credit ratings definitions]

	Moody's	Definition	S&P	Definition
Investment grade	Aaa	Superior ability to repay debt obligations; lowest level of credit risk	AAA	Extremely strong ability to meet financial commitments; highest rating
	Aa1/Aa2/Aa3	High ability to repay debt obligations; very low credit risk	AA+/AA/AA-	Very strong capacity to meet financial commitments
	A1/A2/A3	Upper-medium ability to repay debt obligations; low credit risk	A+/A/A-	Strong capacity to meet financial commitments; susceptible to adverse effects of changes in economic conditions
	Baa1/Baa2/Baa3	Medium ability to repay debt obligations; moderate credit risk, speculative factors	BBB+/BBB/BBB-	Adequate capacity to meet financial commitments; relatively more susceptible to adverse economic conditions
Speculative grade	Ba1/Ba2/Ba3	Speculative; substantial credit risk	BB+/BB/BB-	Major ongoing uncertainties; exposure to adverse business, financial, or economic conditions can impair ability to meet financial commitments
	B1/B2/B3	Speculative; high credit risk	B+/B/B-	More vulnerable to nonpayment than those rated BB; has capacity to meet financial commitments but adverse financial or economic conditions are likely to impair ability to continue doing so
	Caa	Speculative; very high credit risk	CCC	Vulnerable to nonpayment; dependent upon favorable business, financial, and economic conditions
	Ca	Highly speculative; likelihood of being in or near default; some prospect for recovery of principal and interest	CC	Highly vulnerable to nonpayment; default has not yet occurred but expected to be a virtual certainty
	C	Typically in default; little prospect for recovery of principal or interest	C	Highly vulnerable to nonpayment; obligation is expected to have lower ultimate recovery vis-à- vis higher rated obligations
			D	In default or in breach of imputed promises, upon the filing of a bankruptcy petition or the taking of a similar action

I. Whether the Company is listed (or registered or designated) and matters related to special listed companies

Listed (or registered or designated)	Date listed (or registered or designated)	Special listed company	Subject to regulations for special exception companies
Stock market (KOSPI)	June 11, 1975	No	No

2. Company history

(Company history)

Jan 13, 1969	Samsung Electronics Manufacturing Incorporated
Jun 11, 1975	Listed on the Korea Stock Exchange
Feb 28, 1984	Renamed as Samsung Electronics
Nov 1, 1988	Merged with Samsung Semiconductor and Communications
Apr 1, 2012	Spun off the LCD division
Jan 28, 2016	Sold shares of Samsung Card (37.5%)
Jun 24, 2016	SEA acquired shares of Joyent (100%)
Sep 7, 2016	SEA acquired shares of Dacor (100%)
Oct 7, 2016	SEA acquired shares of Viv Labs (100%)
Nov 1, 2016	Spun-off printing solutions business (established S-Printing Solution Co., Ltd.)
Mar 10, 2017	SEA acquired shares of Harman International Industries, Inc. (100%)
Nov 1, 2017	Sold Printing Solution business
May 17, 2018	Sold shares of NexusDx, Inc.
Jan 28, 2019	SEBN acquired shares of Corephotonics
Jun 1, 2019	Acquired PLP (panel level package) business from Samsung Electro-Mechanics

(Company location changes)

The Company's head office is located at 129, Samsung-ro, Yeongtong-gu, Suwon, Gyeonggi-do. There was no change in the Company's head office location during the reporting period.

(Important changes in management executives)

On March 11, 2016, Executive Directors Boo-keun Yoon, Jong-kyun Shin and Sang-hoon Lee were reappointed at the AGM. Of the three Independent Executive Directors with expiring terms (In-ho Lee, Kwang-soo Song and Eun-mee Kim), Eun-mee Kim retired, and In-ho Lee, Kwang-soo Song were reappointed. Jae-wan Bahk was newly appointed as an Independent Director.

On October 27, 2016, Jae-yong Lee was newly appointed as Executive Director at the Extraordinary General Meeting of Shareholders and Sang-hoon Lee resigned from his position as Executive Director.

Following the annual meeting on March 23, 2018, Sang-hoon Lee, Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh were newly appointed as Executive Directors and Jeong Kim, Sun-uk Kim, Byung-gook Park were newly appointed as Independent Directors. In addition, Executive Director Oh-hyun Kwon and Independent Directors Han-joong Kim and Byeong-gi Lee retired as terms expired. Executive Directors Boo-keun Yoon and Jong-kyun Shin resigned.

On March 23, 2018, Executive Directors Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh were newly appointed as CEOs.

On March 20, 2019, Independent Director Jae-wan Bahk was reappointed and Independent Directors Han-jo Kim and Curie Ahn were newly appointed. Independent Directors In-ho Lee and Kwang-soo Song retired.

On October 26, 2019, Jae-yong Lee retired from his position of Executive Director.

On February 14, 2020, Sang-hoon Lee resigned from his position of Executive Director; and on March 18, 2020 at the AGM, Jong-hee Han and Yoon-ho Choi were appointed as Executive Directors.

As of the reporting date on August 14, 2020, SEC's Board consisted of five Executive Directors (Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, and Yoon-ho Choi) and six Independent Directors (Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, and Han-jo Kim).

(Changes in the major shareholder)

N/A

(Company name changes)

In 2016, YESCO Electronics LLC changed its name to Prismview, LLC.

In 2017, Quietside LLC, NewNet Communication Technologies (Canada), Inc., and Martin Professional ApS changed their names to Samsung HVAC America, LLC, SigMast Communications Inc., and Harman Professional Denmark ApS, respectively.

In 2018, Harman Connected Services Finland OY, and Harman Professional Singapore Pte. Ltd changed their names to Harman Finland Oy, and Harman Singapore Pte. Ltd., respectively.

In 2019, Samsung Electronics Greece S.A. changed its name to Samsung Electronics Greece S.M.S.A.

☞ Details are for SEC and major subsidiaries of SEC. See G. Subsidiaries subject to consolidated financial statements in 『I. Corporate Overview』 for details.

(Mergers and acquisitions)

In 2016, SEA acquired shares in Joyent, Inc. (100%), Dacor Holdings, Inc. (100%), and Viv Labs, Inc. (100%). In the same year, SEC spun off its printing solution business and established S-Printing Solution Co., Ltd., and then completed the sale of the printing solutions business in 2017.

In 2017, SEA acquired full ownership of Harman International Industries, Inc.

In 2018, SEA merged with Samsung Pay, Inc.; and Harman Connected Services, Inc. merged with Harman Connected Services Holding Corp. In the same year, SEA sold its full stake in NexusDX, Inc.

In 2019, SEC acquired a PLP business from affiliate Samsung Electro-Mechanics. In the same year, Harman Becker Automotive Systems Manufacturing Kft merged with Duran Audio B.V.; and Samsung (China) Investment Co., Ltd. (SCIC) merged with Samsung Electronics (Beijing) Service Company Limited (SBSC). Samsung Electronics Benelux B.V. (SEBN) acquired shares of Corephotonics Ltd.

☞ Details are for SEC and major subsidiaries of SEC. See G. Subsidiaries subject to consolidated financial statements in 『I. Corporate Overview』 for details.

(Important changes in the Company's business)

N/A

(Changes in organizational structure)

In November 2016, the Company spun off its printing solutions business and established S-Printing Solution Co., Ltd., and then completed the sale of the printing solutions business in November 2017; in June 2017, the System LSI business was divided into Foundry and System LSI businesses.

[As of December 2016]

	Before	After
Business organization	CE Division (Visual Display, Digital Appliances, Printing Solutions, Medical Devices)	CE Division (Visual Display, Digital Appliances, Medical Devices)
	IM Division (Mobile, Network)	IM Division (Mobile, Network)
	DS Division (Memory, System LSI, DP)	DS Division (Memory, System LSI, DP)
Regional headquarters	Korea, North America, Latin America, Europe, CIS, Southwest Asia, Southeast Asia, China, Middle East, Africa	Korea, North America, Latin America, Europe, CIS, Southwest Asia, Southeast Asia, China, Middle East, Africa
	Americas (DS), Europe (DS), China (DS), Southeast Asia (DS), Japan (DS)	Americas (DS), Europe (DS), China (DS), Southeast Asia (DS), Japan (DS)

[As of June 2017]

	Before	After
Business organization	CE Division (Visual Display, Digital Appliances, Medical Devices)	CE Division (Visual Display, Digital Appliances, Medical Devices)
	IM Division (Mobile, Network)	IM Division (Mobile, Network)
	DS Division (Memory, System LSI, DP)	DS Division (Memory, System LSI, Foundry, DP)
	-	Harman Division
Regional headquarters	Korea, North America, Latin America, Europe, CIS, Southwest Asia, Southeast Asia, China, Middle East, Africa	Korea, North America, Latin America, Europe, CIS, Southwest Asia, Southeast Asia, China, Middle East, Africa
	Americas (DS), Europe (DS), China (DS), Southeast Asia (DS), Japan (DS)	Americas (DS), Europe (DS), China (DS), Southeast Asia (DS), Japan (DS)

Harman Division was added on the acquisition of Harman International Industries, Inc. in March 2017.

Health & Medical Equipment Business was excluded from the CE Division in 1Q18 and included again from 1Q20.

3. Changes in paid-in capital

No changes were reported during the past five consecutive years.

4. Stock information

A. Total number of shares

As of June 30, 2020 on a post-split basis, SEC's issued shares on a cumulative basis totaled 7,780,466,850 registered common shares and 1,194,671,350 registered, non-voting preferred shares; and the Company had canceled 1,810,684,300 common shares and 371,784,650 preferred shares in accordance with resolutions of the Board of Directors ("the Board"). As of the same date, issued shares and shares outstanding totaled 5,969,782,550 for common shares and 822,886,700 for preferred shares.

[As of Jun 30, 2020]

(Shares)

Classification	Type of stocks			Note
	Common	Preferred	Total	
I. Authorized shares	20,000,000,000	5,000,000,000	25,000,000,000	-
II. Issued shares (cumulative)	7,780,466,850	1,194,671,350	8,975,138,200	-
III. Decrease in number of shares (cumulative)	1,810,684,300	371,784,650	2,182,468,950	-
1. Capital reduction	-	-	-	-
2. Cancellation	1,810,684,300	371,784,650	2,182,468,950	Treasury shares
3. Redemption	-	-	-	-
4. Other	-	-	-	-
IV. Issued shares as of Jun 30, 2020 (II-III)	5,969,782,550	822,886,700	6,792,669,250	-
V. Treasury shares as of Jun 30, 2020	-	-	-	-
VI. Outstanding shares as of Jun 30, 2020 (IV-V)	5,969,782,550	822,886,700	6,792,669,250	-

Post-split basis. SEC conducted a 50:1 stock split effective from May 3, 2018, lowering par value of every common and preferred share from KRW 5,000 to KRW 100.

B. Treasury shares

In 2018, SEC completed the cancellation of all shares held in treasury as a part of its shareholder return policy.

[As of Jun 30, 2020]

(Shares)

Acquisition method	Share type	Period-start	Change			Period-end
			Acquisition (+)	Disposal (-)	Cancellation (-)	
Intra-market direct acquisition (within dividend related capital gains limit)	Common	-	-	-	-	-
	Preferred	-	-	-	-	-
Total	Common	-	-	-	-	-
	Preferred	-	-	-	-	-

C. Types of registered stock

SEC has two types of registered equity securities: 1) common stock; 2) non-voting and non-cumulative preferred stock.

The shareholders of preferred stock are entitled to dividend payments of an additional 1% of par value compared to shareholders of common stock.

As of June 30, 2020, the number of issued non-cumulative and non-voting preferred stock totaled 822,886,700.

5. Voting shares

SEC has 5,969,782,550 issued shares of common stock, which represents 23.9% of the total number of authorized shares of 25 billion (25,000,000,000). There are 822,886,700 issued shares of preferred stock with no voting rights and 597,806,952 shares of common stock with limited voting rights under relevant laws. Thus, the total number of shares with full voting rights is 5,371,975,598.

[As of Jun 30, 2020]

Classification	Share type	Number of shares	Note
Number of issued shares (A)	Common	5,969,782,550	-
	Preferred	822,886,700	-
Shares with no voting rights (B)	Common	-	-
Shares with no voting rights according to Articles of Incorporation (C)	Preferred	822,886,700	-
Shares with limited voting rights under relevant laws (D)	Common	596,959,200 ¹⁾	508,157,148 shares held by Samsung Life Insurance & 88,802,052 shares held by Samsung Fire & Marine Insurance
	Common	847,752	Restricted by the Insurance Business Act: Shares held by Samsung Life Insurance in certain special accounts
Shares with voting rights (F = A - B - C - D)	Common	5,371,975,598	-
	Preferred	-	-

¹⁾ Pursuant to Korea's Monopoly Regulation and Fair Trade Act, owners can exercise certain rights on some shares in accordance with related laws, including the right to vote on agendas such as the appointment or dismissal of directors and revisions to the Articles of Incorporation.

6. Dividends

As a part of the Company's shareholder return policy, a portion of the profits have been returned to shareholders by way of dividends, etc. The Company carefully considers strategic investments for sustainable growth, business performance, and cash flows in determining the scale of cash dividends and other return activities.

Dividends paid in the three most recent fiscal years are as follows:

Classification		1H20	2019	2018
Par value per share ¹⁾ (KRW)		100	100	100
Net profit ²⁾ (KRW mil)		10,378,563	21,505,054	43,890,877
EPS ³⁾ (KRW)		1,528	3,166	6,461
Total cash dividend (KRW mil)		4,809,210	9,619,243	9,619,243
Total stock dividend (KRW mil)		-	-	-
Dividend payout ratio (%)		46.3	44.7	21.9
Cash dividend yield (%)	Common	1.5	2.6	3.7
	Preferred	1.8	3.1	4.5
Stock dividend yield (%)	Common	-	-	-
	Preferred	-	-	-
Cash dividend per share (KRW)	Common	708	1,416	1,416
	Preferred	708	1,417	1,417
Stock dividend per share (share)	Common	-	-	-
	Preferred	-	-	-

Dividends in each of the first three quarters of 2018 and 2019 and the first two quarters of 2020 were KRW 2,404,605 million or KRW 354 per share.

¹⁾ SEC conducted a 50:1 stock split effective from May 3, 2018, lowering par value of every common and preferred share from KRW 5,000 to KRW 100.

²⁾ Equity attributable to owners of the parent on a consolidated basis.

³⁾ Basic earnings per common share on a consolidated basis. For further information relating to the calculation of basic EPS, see Earnings Per Share in 『3. Note to Consolidated Financial Statements』 in 『III. Financial Affairs』.

II. Businesses Overview

1. Overview

Note on forward-looking statements

This report includes forward-looking statements that relate to future events and can be generally identified by phrases containing words such as “believes,” “expects,” “anticipates,” “foresees,” “forecasts,” “estimates” or other words or phrases of similar meaning. These forward-looking statements are not guarantees of future performance and may involve known and unknown risks, uncertainties and other factors that may affect the Company’s actual results, performance, achievements or financial position, making them materially different from the actual future results, performance, achievements or financial position expressed or implied by these forward-looking statements.

Uncertain events that could positively or negatively affect the Company’s management condition and financial performance include:

- *Trends of financial markets domestically and abroad, including changes in exchange rates and interest rates*
- *The Company’s strategic decision making, including disposals and purchases of businesses*
- *Unexpected sudden changes in core businesses such as CE, IM, Semiconductor, DP, and Harman*
- *Other changes domestically and abroad that can affect management condition and financial performance*

The Company assumes no obligation to revise or update this report to reflect risks or uncertainties that arise after the reporting period.

A. Business overview, by division

In addition to our headquarters in Korea, Samsung Electronics is comprised of 244 subsidiaries across the world responsible for sales and production. There are 9 regional headquarters for CE and IM Divisions, 5 regional headquarters for the DS Division, and Harman’s subsidiaries.

The Company’s business divisions are organized in a two-pronged framework consisting of set (brand products) and component businesses. The set business is comprised of the CE and IM Divisions, and the component business consists of the Semiconductor and DP Business Units. The CE Division is responsible for the production and sales of TVs, monitors, refrigerators, and washing machines; and the IM Division focuses on the production and sales of HHPs, which includes smartphones, as well as network systems, and computers. The DS Division comprises the Semiconductor business which manufactures and sells DRAMs, Nand Flash, mobile APs, and other semiconductor-related products, and the DP Business, which manufactures and sells OLED and TFT-LCD display panels for mobile devices, TVs, monitors, and laptops. The Harman Division (acquired in 2017) manufactures and sells products such as Digital cockpit, telematics, and speakers.

<Major products, by business division>

Business division		Major products
CE Division		TVs, monitors, refrigerators, washing machines, air conditioners, etc.
IM Division		HHPs, network systems, computers, etc.
DS Division	Semiconductor	DRAM, NAND Flash, Mobile AP, etc.
	DP	OLED smartphone panels, LCD TV panels, monitor panels, etc.
Harman Division		Digital cockpit, telematics, speakers, etc.

The Company maintains its corporate headquarters and 29 consolidated subsidiaries in Korea.

The Company's corporate headquarters is divided along Divisions and/or Businesses, which are situated in Suwon, Gumi, Gwangju, Giheung, Hwasung, Pyeongtaek, etc. The Company's 29 unlisted domestic subsidiaries include Samsung Display for display panel production, Samsung Electronics Sales for domestic retail sales, Samsung Electronics Service for after-sales services, and Samsung Electronics Logitech for logistics.

We have 215 overseas subsidiaries for product manufacturing, sales, and R&D, with locations in the US, Europe, Asia, and Africa.

We have 58 subsidiaries in North America, including SEA (New Jersey; responsible for the sales of set products including TV and HHPs), SII (California; manufacturing TVs), SAS (Texas; manufacturing semiconductor products), and Harman (Connecticut, Automotive component) in the US.

In Europe, we operate 66 subsidiaries. These include SEUK (UK), SEF (France), SEG (Germany), SEI (Italy) for sales of set products; SESK (Slovakia) and SEH (Hungary) for manufacturing TVs, and SEPM (Poland) for manufacturing home appliances such as refrigerators.

We have 29 subsidiaries in Asia (ex China), including SAPL (Singapore), SEAU (Australia), SEPCO (Philippines), and SME (Malaysia), which are responsible for regional sales. In addition, we operate numerous production sites including SIEL (India) for HHPs among other products, SEV and SEVT (Vietnam) for HHPs, SEHC (Vietnam) for TVs, and SDV (Vietnam) for DPs.

We operate 34 subsidiaries in China, including SCIC (Beijing) and SEHK (Hong Kong) for the sales of set products in those regions; and SSS (Shanghai) and SSCX (Xian) for semiconductors and DPs sales. Production sites for set products include SESC (Suzhou) and semiconductor production facilities are located in SCS (Xian) among others.

SEC also has 28 production and sales subsidiaries combined in CIS, the Middle East, and the Africa.

[CE Division]

□ Industry overview

Since the first public demonstration of a true television system in 1926 and later mass production of color TVs, technological developments have led to the creation of products such as the Trinitron CRT (1967) and flat CRT (1996). As the penetration rate in major countries reached over 90%, the CRT TV business stagnated. The industry regained strong growth momentum following the launch of flat panel TVs (“FPTVs”) like LCDs and PDPs, especially with the expansion of digital broadcasting (UK/US 1998~). FPTVs replaced CRT sets on the back of their enhanced design, picture quality, etc., combined with a sharp decline in prices.

The year 2010 saw the launch of 3D TVs, and the rise of internet video services along with increased consumer interest in smart devices from 2011 to 2012 led to the birth of the smart TV market. The evolution continued with the launches of UHD TVs, innovative products boasting significantly enhanced resolution and picture quality, a new form factor with Curved TVs, followed by the commercialization of Quantum Dot TVs.

□ Market condition

The market trend toward large, high-resolution screens is accelerating due to intensified competition between devices and manufacturers. Accordingly, market shares of major players with high-quality products and brand power are rising. In addition, as consumer demand for high-resolution screens and slim designs increase, LED TVs, with eco-friendly LED back light units—which increase brightness, contrast, and energy efficiency—have become the mainstream in the market.

In 2017, overall TV demand was 215.1 million units. By product, LCD-TVs sold 210 million units, for a market share of over 99%. In 2018, overall TV demand increased 2.9% compared to the previous year, hovering around 221 million units. In 2019, overall TV demand was 222.91 million units. Amid growing needs for large, high-definition screens, UHD TV demand increased by 20% year-on-year, and the market for ultra-large TVs (75-inch and larger) grew approximately 88% year-on-year backed by our efforts to create demand. In 2019, QLED demand increased about 105% year-on-year based on our dedication to improving product quality and on rising demand for premium products (Source: *Omdia*, 4Q19 data).

In 2020, market players will continue to strive for innovations in picture quality, sound, and form factor to create demand for premium TVs. Competition in the 8K TV market, where the Company holds leadership, is expected to be especially fierce as the market expands. The TV market in 2020 is expected to contract by approximately 200 million units as concerns over an economic slowdown caused by global spread of COVID-19 undermines consumer sentiment. (Source: *Omdia*, TV sets; 1Q20 data)

< Market share of the CE Division’s main product >

Product	1H20	2019	2018
TV	32.4%	30.9%	29.0%

Global market share in revenue; data from research firm *Omdia* (data for 1H20 is Company estimate).

□ Business condition

We have maintained the top position in the overall TV market for fourteen straight years since claiming the number one spot in 2006.

In 2017, the Company created a new category by releasing QLED TVs, offering accurate color expression regardless of brightness and allowing viewers to enjoy unsurpassed image quality. Furthermore, collaborating with renowned artists and galleries, we introduced The Frame TV, a product that exhibits famous art or pictures as well as personal images, transforming any living space into an aesthetically pleasing gallery. Moreover, our concept of ‘Screen Everywhere’ unlocks replacement opportunities for displays.

In 2018, our strategic focus to strengthen premium leadership consisted of two pillars: QLED and ultra-large screens. We aimed to elevate the viewer experience to another level by improving image quality even further by increasing contrast ratio through our local dimming technology, allowing users to conveniently enjoy a wide variety of content on TV, and improving connectivity via AI or IoT technologies.

In 2019, we solidified our leadership in the premium market with the introduction of the world’s first 8K TV to the global market. Our QLED lineup, boasting improved picture quality, was well received by experts and consumers alike, providing customers with even more choices via a wide range of sizes, from mid-sized to ultra-large. Also, our UHD offerings expanded to the ultra-large segment, which contributed to our solid earnings.

In 2020, we will push forward with our premium TV strategy: for QLED, we will build on our leadership and expand dominance in the premium market with ultra-large TVs based on the competitiveness of our substantially improved products and our broadened 8K lineup. Also, our UHD models for the mass market will come equipped with significant improvements in design and features, differentiating themselves from those of competitors.

[IM Division]

□ Industry overview

The mobile phone industry started with first generation analogue phones in the early 1980s and evolved to second generation digital ones, using technology such as CDMA and GSM, where users could send voice and text messages. Third generation mobile communication standards such as WCDMA allowed users to send photos and videos. Today, fourth generation LTE mobile communication technology with ultra-high-speed data transmission is becoming commonplace and is used in 75% of phones sold in 2019 (*Strategy Analytics*, May 2020). Fifth generation mobile communication services, which will lead innovation alongside the fourth industrial revolution, were successfully commercialized in Korea and the US and are expanding to Europe and Australia. Sales of 5G smart phones are projected to reach 230 million units in 2020 (*Strategy Analytics*, June 2020).

The smartphone industry has grown significantly since 2007. In 2020, the smartphone portion of total HHPs is expected to reach 75%. The feature phone portion of the total remained flat at 25% led by demand markets in developing nations (*Strategy Analytics*, June 2020). In 2020, the penetration rate of smartphones will reach 49%, slightly increasing from 48% in 2019 (*Strategy Analytics*, June 2020).

Also, as the smartphone market shows high saturation, the importance of competitive software and services—such as applications, UX, mobile payments, AI, and AR—is rising alongside that of competitive hardware, which includes high-performance APs, AMOLED displays, multiple cameras, sensors, waterproof & dustproof features, and biometric recognition.

□ Market Condition

The smartphone market was projected to grow from 1.41 billion units in 2019 to 1.45 billion units in 2020 amid an expansion of 5G services, however, it is now projected to decline to 1.19 billion units due to the global spread of COVID-19. Meanwhile, shipments of tablets are expected to decrease from 160 million units in 2019 to 150 million units in 2020 due to slower replacement demand and impacts of COVID-19 (*Strategy Analytics*, smartphone: June 2020, tablet: May 2020).

< Market share of the IM Division’s main product >

Product	1H20	2019	2018
HHP	16.3%	17.5%	17.4%

Global market share in sales volume; data from research firm *Strategy Analytics*.

□ Business condition

SEC has always been at forefront of the HHP market, and for smartphones in particular, we have maintained leadership in the global market for nine consecutive years since 2011. To solidify our status in the overall mobile market, we are striving to improve our current products—including tablets, wearables, and accessories—while growing businesses in areas with high potential, such as the service, online, and B2B sectors.

For smartphones, we are establishing optimal portfolios for each region, accounting for varying market conditions and the competitive environment, offering a wide smartphone lineup ranging from mass-market to premium devices. We have been providing premium smartphones—namely the S and Note series—and delivering differentiated user experiences that can meet customer needs via our cutting-edge technology that includes large-screen AMOLED displays, Edge displays, Infinity Displays, Bluetooth S-pen, water- and dust-proofing, high-speed and wireless charging, wireless power sharing, and ultrasonic fingerprint-on-display (FoD), 100x zoom for pictures and 8k video recording, among others. In 2019, we secured early leadership in the 5G market with the release of the world's first 5G smartphone while also creating a new market with Galaxy Fold, enabled by foldable displays. In 2020, we continued to lead mobile technology trends with the launch of Galaxy Z Flip, a new form factor that folds from top down.

To respond to an ever-changing market as well as customer needs, we are strengthening product competitiveness by introducing innovative features such as triple cameras, quad cameras, rotating cameras, infinity displays, and 5G even to mid-range-and-below products.

We provide our smartphone users with a wider and more convenient experience via our other products, which include premium tablets (Galaxy Tab S), wearable devices (smart watch, Bluetooth earphone), and accessories (wireless quick charging stand).

Not content to dwell on our achievements in hardware, we have been focusing on delivering new and helpful services like Samsung Pay, Samsung Health, Bixby, and SmartThings. To deliver a consistent and high-quality Multi-Device Experience, we are adding Bixby features to a suite of products in addition to smartphones, including TVs, refrigerators, air conditioners, etc.

Moreover, we are strengthening strategic partnerships to expand our ecosystem. As always, we will continue to invest in any field that has growth potential, with current targets including but not limited to 5G, MEC, AI, IoT, cloud, AR, blockchain, and mobile B2B, while leveraging our superior R&D capabilities to keep delivering new value to customers.

[DS Division]

- Semiconductor

□ Industry overview

In general, our Semiconductor business is divided into Memory (storage) and System LSI (logical processing). Memory semiconductor is divided into RAM products (random access memory, ones that can be both written on and read) and ROM products (read only memory).

RAM is called volatile memory as the information is deleted when the power is turned off. It is used for temporary loading and storage of application programs. ROM is nonvolatile and holds memory even when power is removed; it is used in input/output system, IC cards, and more. For System LSI products, there are many categories for various applications, with CPUs (central processing units) for PCs, mobile devices, and servers forming the largest market. System LSI products are used in myriad areas, such as household electronics, networks, and games. The Company manufactures mobile APs for smartphones and tablets, image sensors, and other customized products.

□ Market condition

Despite the challenges caused by COVID-19, the semiconductor business in 2020 recorded growth in both sales and profit by preemptively addressing an increase in server demand, mainly from datacenters. In the second half of the year, demand will continue to be driven by acceleration of digitization, mainly from the 'untact' industry. As such, we will preemptively address the post-COVID-19 world with high-capacity and differentiated products utilizing our advantages in product competitiveness.

< Market share of the Semiconductor Business' main product >

Product	1H20	2019	2018
DRAM	43.8%	43.7%	43.9%

Global market share in revenue; data from research firm *DRAMeXchange*.

□ Business condition

We are the only Company in the industry using the EUV process in the mass production of DRAM, having been the first to secure the core technology for the developing next-generation DRAM and once again achieving a breakthrough in advanced processes in semiconductor. In addition, we have developed 6th generation Vertical NAND, which will be embedded in high-performance SSDs to expand our share in the premium market.

In System LSI, we are differentiating our mobile components, including 5G modem-embedded SOC, high-resolution image sensor, high-scan-rate and high-resolution display driver ICs, among others, to respond to the prolonged global economic slowdown in 2020 caused by COVID-19 and market uncertainties such as US-China trade sanctions. In 2H20, we will prepare for a recovery in demand by strengthening our supply chain management and expanding our presence in emerging business areas, including automotive, wearable, custom SOC, where strong growth is expected.

In the Foundry business, despite impacts of COVID-19, demand for products that are 14-nano and below for use in 5G mobile phones and data centers continued to grow. To embrace an increase in demand in the second half and to facilitate mid- to long-term growth, we installed and started operating our new EUV line ahead of schedule. Competing with TSMC as the top two players in advanced node process technology, SEC will lead the market by introducing 5-nano products in 2H20 and via timely development of 4-nano products and next generation processes, such as the GAA-applied 3-nano process. In terms of legacy processes, we are expanding our customer base and areas of application from our mobile-focused business model to include HPC, consumer, networks, and automotives. Moreover, we are diversifying our production portfolio, which already includes CISs, DDIs, PMICs, and more. Our 8-inch products are expanding their foothold via securing numerous customers around the world.

- DP

□ Industry overview

Display refers to screens in electronic devices. Active matrix technology is most commonly used in displays, including OLED (organic light emitting diode) panels and TFT-LCD (thin film transistor liquid crystal display).

OLED panels use organic materials, which offer sharp contrast and color, high color gamut, and fast response rates. Such differentiating features provide advantages for use in smartphones where display features (multimedia contents, online experience, etc.) are important, and as a result, OLED adoption in the smartphone market is growing rapidly.

The market had raised concerns over the production of high-resolution, durable panels, but we overcame various technological challenges and advanced the business. OLED panels make up for the shortcomings of LCD panels, and they can be adopted in other applications such as foldable, rollable, and automotive. Growth of the OLED market is widely expected to keep accelerating.

A TFT-LCD panel is a liquid crystal based display that features a thinner and lighter profile while offering high resolution. It has a wide range of potential applications in devices of all sizes and functionality, from portable mobile devices to large-size TVs featuring bright, high-resolution images. The market for large-panel TFT-LCD grew rapidly as their use moved from laptops initially to monitors and then to TVs. Recently however, high saturation has caused growth to slow.

□ Market condition

As market uncertainties escalate due to intensifying competition and soft consumer sentiment caused by COVID-19, the market for mobile display—our core product—is expected to decrease year-on-year to 1.44 billion units (ie, 970 million TFT-LCD and 470 million OLED) for 2020. The OLED portion of mobile panels, however, is forecast to rise from 30% in 2019 to 32% in 2020 (Source: *Omdia*, Mobile Panel-Smartphone OLED panels; July 2020).

Moreover, demand for large displays is forecast to decline year-on-year due to disruptions in sporting events amid the pandemic.

< Market share of the DP Business's main product >

Product	1H20	2019	2018
Smartphone panels	41.3%	43.6%	47.6%

Global market share in revenue; data from research firm Omdia. (1H20 data is external research firm estimate)

□ Business condition

The Company has continued to stay atop the mobile OLED market in terms of market share since it successfully commercialized OLED products in 2007, marking a world's first. We diversified our product group to include displays for foldable products, tablets, watches, laptops, and automotive applications, solidifying our position as the top player in the OLED display market.

With both flexible and rigid OLED, our optimal smartphone product portfolio ranges from mass-market to premium devices; and we are recognized as having best-in-class technology through our introduction of products with differentiated technologies and designs.

To fortify our leading position in OLED panel market, we will proactively address consumers' needs and expand the market for new products, which include foldable and IT devices, based on our differentiated functions and designs. Moreover, we will develop a system that can promptly respond to a rapidly changing environment to minimize volatility in our business.

Amid a structural reorganization of the large panel business, we will fulfill customer demand without fail and accelerate product development with our new technologies.

[Harman Division]

□ Industry overview

The automotive component business (digital cockpits, telematics, etc.), consumer audio (connected homes, headphones, smart audio, etc.), and the professional audio market (audio, lighting, video & control solutions for commercial use, including for large venues) are highly competitive and growing rapidly.

For the connected car business in the automotive industry, numerous companies—eg, Alpine, Aptiv, Continental, Mitsubishi, and Panasonic—are cooperating with automotive manufacturers. Competition is expected to remain fierce between dominant players and new entrants as consumers expect car makers to deliver the latest technology, including autonomous driving.

Car audio systems is another segment where several major players (eg, Bose, Pioneer, and Panasonic) are competing fiercely, which is expected to drive technological advances as each player introduces unique sound-management solutions. As such, competition is expected to remain intense.

The consumer audio industry is rather fragmented and a handful of companies (Amazon, Beats, Bose, Ultimate Ears, etc.) are showing early signs of dominance. We expect competition to remain intense as new players try to make inroads, given the saturated market for connected homes and smart speakers.

The professional audio industry, led by QSC and Yamaha, is segmented by product and has seen the entrance of numerous companies offering a wide range of products and applications. We expect competition to keep intensifying as connected homes and smart speakers gain popularity and on the entrance of new players from other industries such as the service sector.

□ Market condition

In 2020, global automobile production, which directly influences the automotive component business, is expected to decrease by 19% year-on-year. Although production volume in 1H20 declined due to the pandemic, it is likely to rise gradually from 2H20 and record 15% growth year-on-year in 2021. (*LMC Global Production Forecast*, June 2020).

The consumer audio market is projected to grow 4% *pa* until 2023 (Futuresource, November 2019). The professional audio market grew by 5-6% *pa* over the last five years (AVIXA, Futuresource, Global Info & Arizton, June 2019).

Technological innovations in the connected home and smart audio have been the driving force behind a considerable hike in demand. We anticipate that demand will keep rising as technology continues to advance amid a growing global economy.

< Market share of Harman Business's main product >

Product	1H20	2019	2018
Digital cockpits	27.1%	24.8%	18.8%

Digital cockpits refer to the digital automotive component which enables safe driving environment via infotainment system, etc. Product group named changed from headunit to digital cockpit from 2020. Company estimates based on Omdia, and LMC data.

□ Business condition

Harman is positioned to stay atop the automotive market and plans to continue to leverage its wide variety of brands to outfit vehicles ranging from mass-market thorough to luxury models, while also maintaining the quality that is synonymous with Harman brands. Additionally, Harman's relentless pursuit of innovation in the audio and connectivity spaces will help ensure the development of thriving relationships with automakers.

Additionally, Harman has continued to develop its Connected Services business with industry leading OTA (Over the Air) and software servicing products.

The same factors that Harman relies on within the automotive market will also be used in the consumer/professional audio market. Having won three Grammy Awards and two Academy Awards, Harman's brands have earned a strong reputation amongst everyday consumers and audiophiles alike. New offerings in up-and-coming segments such as connected wireless and smart audio continue to help bring in new consumers and further enhance brand reputation.

In 2020, the COVID-19 pandemic has created a challenging business environment, marked by halt in automobile production, a decline in transient population who are potential consumers, the closing of retailers, etc. The professional audio solution business of the Harman division, in particular, is expected to feel the impact of a reduction in the number of large-scale gatherings and events. Amid such an unstable business environment, we have prioritized the health and safety of our employees, partners, and clients, providing a safe working environment according to guidelines from health experts and authorities in each country. Moreover, we are enhancing cost efficiency by reducing marketing activities. Although we are decreasing capex, we will strengthen our position as a market leader in automotive components and other businesses by continuing to implement innovative projects.

B. Financial Summary, by Division

(KRW 100 mil)

Division	Classification	1H20		2019		2018		
		Amount	Portion of corresponding total	Amount	Portion of corresponding total	Amount	Portion of corresponding total	
CE	Sales	455,277	18.4%	1,004,027	18.9%	959,848	17.0%	
	Internal	250,573	18.0%	550,799	18.3%	533,350	16.7%	
	Net	204,704	18.9%	453,228	19.7%	426,498	17.5%	
	Operating profit	11,846	8.1%	25,090	9.0%	19,073	3.2%	
	Total asset	607,889	11.9%	680,244	13.5%	492,302	10.1%	
IM	Sales	967,597	39.1%	2,239,591	42.2%	2,148,844	38.2%	
	Internal	500,029	36.0%	1,166,930	38.8%	1,142,067	35.8%	
	Net	467,568	43.2%	1,072,662	46.6%	1,006,777	41.3%	
	Operating profit	45,996	31.5%	92,725	33.4%	101,720	17.3%	
	Total asset	1,654,574	32.4%	1,432,804	28.5%	1,243,340	26.2%	
DS	Semi-conductor	Sales	702,148	28.4%	1,237,668	23.3%	1,657,625	29.4%
		Internal	343,395	24.7%	588,277	19.6%	794,715	24.9%
		Net	358,753	33.1%	649,391	28.2%	862,910	35.4%
		Operating profit	94,198	64.5%	140,163	50.5%	445,739	75.7%
		Total asset	1,947,652	38.1%	1,791,177	35.6%	1,515,782	31.9%
	DP	Sales	285,497	11.5%	669,088	12.6%	693,495	12.3%
		Internal	152,394	11.0%	358,548	11.9%	368,844	11.6%
		Net	133,103	12.3%	310,539	13.5%	324,650	13.3%
		Operating profit	115	0.1%	15,813	5.7%	26,198	4.4%
		Total asset	611,187	12.0%	642,264	12.8%	641,543	13.5%
	Total DS	Sales	1,000,685	40.5%	1,931,419	36.4%	2,395,650	42.6%
		Internal	508,870	36.6%	976,239	32.5%	1,209,994	37.9%
		Net	491,815	45.4%	955,180	41.5%	1,185,656	48.6%
		Operating profit	94,557	64.8%	155,817	56.1%	465,164	79.0%
		Total asset	2,579,471	50.5%	2,451,438	48.8%	2,425,593	51.1%
Harman	Sales	41,471	1.7%	117,498	2.2%	109,711	1.9%	
	Internal	5,033	0.4%	16,727	0.6%	21,274	0.7%	
	Net	36,438	3.4%	100,771	4.4%	88,437	3.6%	
	Operating profit	(2,810)	(1.9)%	3,223	1.2%	1,617	0.3%	
	Total asset	146,188	2.9%	156,091	3.1%	150,599	3.2%	

Sales for each business unit includes intersegment sales.

CE data for 2019 and 2018 are restated to include the Health & Medical Equipment Business.

2018 data shown in conformity with K-IFRS 1017 (Lease), 2104, 2015, 2027.

In 1H20 by Division, CE reported net sales of KRW 20,470.4 billion (18.9% of total net sales) and IM reported net sales of KRW 46,756.8 billion (43.2%). DS contributed approximately 45.4% of net sales: KRW 35,875.3 billion (33.1%) by the semiconductor sub-division and KRW 13,310.3 billion (12.3%) by the DP Business Unit. The Harman Division reported net sales of KRW 3,643.8 billion (3.4%).

In 1H20, the CE Division accounted for 8.1% of total operating profit with an operating profit of KRW 1,184.6 billion; the IM Division accounted for 31.5% with KRW 4,599.6 billion; and the DS Division accounted for 64.8% with KRW 9,455.7 billion. The Harman Division posted an operating loss of KRW 281.0 billion.

□ Reasonable allocation of common SG&A (selling general & administrative) expenses and assets

(1) For common SG&A expenses, specific expenses that are allocable to a specific product/model are allocated to such product/model. However, common expenses that cannot be attributed to a specific product/model category are reasonably allocated throughout the Company based on an allocation standard (expense-to-sales ratio, number of personnel, etc.).

(2) For common assets, assets that can be directly allocated (inventory assets, fixed assets, investment assets, etc.) are allocated to the corresponding organizational unit. Assets that are commonly managed and cannot be directly allocated are allocated to each Division based on an allocation standard (expense-to-sales ratio, pre-tax profit, etc.).

2. Key products and service

A. Revenue

SEC is involved in production and sales of set products, including TVs, refrigerators, washers, air conditioners, HHPs, computers, and components such as semiconductors and display panels. Through Harman, the Company also produces and sells products such as digital cockpits and telematics.

In 1H20, CE reported net sales of KRW 20,470.4 billion (18.9% of total net sales) and IM reported net sales of KRW 46,756.8 billion (43.2%). DS contributed approximately 45.4% of net sales, reporting KRW 49,181.5 billion. The Harman Division reported net sales of KRW 3,643.8 billion (3.4%).

(KRW 100 mil)

Division		Major products	Net revenue	Portion
CE		TVs, monitors, refrigerators, washing machines, air conditioners, etc.	204,704	18.9%
IM		HHPs, network systems, computers, etc.	467,568	43.2%
DS	Semiconductor	DRAM, NAND flash, mobile APs, etc.	358,753	33.1%
	DP	OLED smartphone panels, LCD TV panels, monitor panels, etc.	133,103	12.3%
	DS total		491,815	45.4%
Harman		Digital cockpit, telematics, speakers, etc.	36,438	3.4%
Others		-	(117,612)	(10.9)%
Total			1,082,913	100.0%

Net revenue includes sales between Divisions.

☞ See 『5. Sales and distribution』 for sales by each product.

B. Average selling price changes

In 1H20, the ASP of TVs decreased approximately 8% and that of HHPs remained flat. The ASP of memory products fell by approximately 4% year-on-year, whereas display panel ASP decreased approximately 7%. The ASP of digital cockpits declined approximately 5% year-on-year.

3. Key production materials

A. Key production materials

For the CE Division, key materials include display panels for TVs and monitors, which are supplied by AUO and other companies. For the IM Division, key materials include camera modules, baseband chips for mobile devices, which are supplied by Semco, Qualcomm and others. For the DS Division, key materials include Wafer, FPCAs, windows, chemicals, POL with suppliers including SUMCO, BH, Lens, Soulbrain holdings, and Dongwoo Fine-Chem. For the Harman division, key materials include SoC (system-on-chip) products and memory products for in-vehicle solutions, which are supplied by Nvidia, Avnet, etc.

(KRW 100 mil)

Division	Item	Specific usage	Purchase price	Portion	Note (supplier)
CE	Display panel	Color picture signaler for TV, Monitor	22,756	23.1%	AUO, BOE, etc.
	Others		75,899	76.9%	
	Division total		98,655	100.0%	
IM	Camera module	Camera for Mobile	28,042	17.8%	Semco, MCNEX, etc.
	Base band chip	CPU	19,465	12.3%	Qualcomm, MediaTek, etc.
	Display panel	Color picture signaler for Mobile	7,870	5.0%	BOE, CSOT, etc.
	Others		102,243	64.9%	
	Division total		157,620	100.0%	
DS	Wafer	Semiconductor disk	9,728	8.6%	SUMCO, GW etc.
	FPCA	Circuit	8,313	7.3%	BH, Union, etc.
	Window	Tempered glass	7,440	6.6%	Lens, Biel, etc.
	Chemical	Disk processing	7,066	6.2%	Soulbrain holdings, etc
	POL	Polarizer plate	6,286	5.5%	Dongwoo Fine-Chem, Samsung SDI, etc.
	Others		74,637	65.8%	
	Division Total		113,470	100.0%	
Harman	System-on-chip	Chips for vehicles	1,926	27.8%	Nvidia, Renesas, etc.
	Automotive memory chip	Chips for vehicles	1,379	19.9%	Avnet, Microchip, etc.
	Others		3,618	52.3%	
	Division total		6,923	100.0%	
Division total			256	-	
Total			376,924	-	

On a consolidated basis.

Semco and Samsung SDI are subsidiaries.

B. Production material price trends

The price of TV and monitor display panels, which are the major production materials for the CE Division, declined approximately 13% year-on-year. For the IM Division, compared to last year, the price of camera modules and display panels for mobile increased approximately 19% and 25% respectively. The price of base band chips declined approximately 7%. For the DS Division, the price of wafers for semiconductor disks declined approximately 3%, while the price of FPCAs increased approximately 6% year-on-year. Prices of tempered glass windows remained flat year-on-year. The price of POL for polarizing plates increased approximately 4% compared to the previous year. For the Harman division, the prices of memory for vehicles and SoC products decreased by about 6% and 5% respectively, compared to levels in the previous year.

4. Production and facilities

A. Production capacity, output, utilization rate

(Capacity)

(1,000 units)

Division	Item	Capacity		
		1H20	2019	2018
CE	Image devices	23,393	51,418	60,699
IM	HHP	160,200	346,960	397,497
DS	Memory	560,188,000	988,104,000	711,023,000
	Display panel	3,724	8,236	9,167
Harman	Digital cockpit	4,764	7,921	5,238

Production capacity for major product categories on a consolidated basis.

CE data for 2019 and 2018 are restated to expand the range of products from TVs to image devices, including monitors.

The CE and IM Divisions' production capacity, by major product, is calculated as follows:

the average number of lines (x) the average output per hour (x) the average operation hours per day (x) standard days of operation

Memory production capacity for the DS Division is calculated as follows:

converted output (after packaging, 1Gb equivalent) ÷ the utilization rate

Display panel production capacity is calculated as follows:

The total producible panel surface area ÷ the dimensions of eighth generation glass (2200x2500mm)

Harman's production capacity for Digital cockpit is calculated as follows:

the number of production (assembly and test) cells for each customer/product (x) the average production capacity per hour by production cell (x) the average operation hours per day (x) standard days of operation

(Output)

In the first half of 2020, the CE Division's output of imaging equipment was 18,832 thousand units (major production sites: Mexico, Vietnam, Brazil, Hungary, and China). The IM Division's output of HHPs was 106,937 thousand units (major production sites: Korea [Gumi], Vietnam, India, and Brazil). The DS Division's memory output (1Gb equivalent) was 560,188 million (major production sites: Korea [Hwaseong, Pyeongteak] and China). The DP Division's output of display panels was 2,867 thousand units (major production sites: Korea [Cheonan, Asan], China). The Harman Division's Digital cockpit output was 2,386 thousand units.

(1,000 units)

Division	Item	Output		
		1H20	2019	2018
CE	Image devices	18,832	43,964	42,758
IM	HHP	106,937	318,635	346,605
DS	Memory	560,188,000	988,104,000	711,023,000
	Display panel	2,867	6,567	7,599
Harman	Digital cockpit	2,386	6,459	3,906

Output for major product categories on a consolidated basis

CE data for 2019 and 2018 are restated to expand the range of products from TVs to image devices, including monitors.

(Utilization rate)

In 1H20, CE and IM utilization rates were calculated as actual output relative to production capacity. The utilization rates were 80.5% for Image devices and 66.8% for HHPs.

(1,000 units)

Division	Item	1H20		Utilization rate
		Production capacity	Output	
CE	Image devices	23,393	18,832	80.5%
IM	HHP	160,200	106,937	66.8%

The DS Division operates memory and display panel production in three shifts (24 hours a day). Cumulative operating days including holidays were 182 days in the first half of 2020. The utilization rate was calculated as actual hours [182 days (x) number of production lines (x) 24 hours] relative to production capacity.

(Hours)

Division	Item	1H20		Utilization rate
		Potential production time	Actual production time	
DS	Memory	34,944	34,944	100.0%
	Display Panel	34,944	34,944	100.0%

In 1H20, Harman's utilization rate was 50.1% and was calculated as actual output relative to production capacity.

(1,000 units)

Division	Item	1H20		Utilization rate
		Production capacity	Output	
Harman	Digital cockpit	4,764	2,386	50.1%

B. Production facilities and investment

(Key facilities for production and operation)

The Company's operational activities include manufacturing, development, marketing, and sales. In Korea, operations are located in Suwon, Gumi, Gwangju, Hwaseong, Pyeongtaek, and Asan. Overseas operations in North America, Europe, and China include a total of include nine regional headquarters under the CE and IM Divisions, five regional headquarters under the DS Division, and Harman and its subsidiaries.

[Operations]

Region	Operations	Location
Korea (12)	Suwon	Suwon
	Seochon	Seoul
	Woomyeon	Seoul
	Giheung	Yongin
	Hwaseong	Hwaseong
	Pyeongtaek	Pyeongtaek
	Cheonan	Cheonan
	Onyang	Onyang
	Asan	Asan
	Gumi1	Gumi
	Gumi2	Gumi
	Gwangju	Gwangju
Overseas (CE and IM Divisions - nine regional headquarters)	North America	New Jersey, US
	Europe	Surrey, UK
	China	Beijing, China
	Southeast Asia	Singapore, Singapore
	Southwest Asia	Haryana, India
	CIS	Moscow, Russia
	Middle East	Dubai, UAE
	Africa	Johannesburg, South Africa
	Latin America	Sao Paulo, Brazil
Overseas (DS Division - five regional headquarters)	Americas	San Jose, US
	Europe	Eschborn, Germany
	China	Shanghai, China
	Southeast Asia	Singapore, Singapore
	Japan	Tokyo, Japan
Harman	North America HQ	Connecticut, US

Harman's Connected Car business is mainly based in the US (Novi, MI), and its Lifestyle Audio business is located in Germany (Garching). Its Professional Solutions business operates mainly in the US (Northridge, CA), and Connected Services business is based in US (Mountain View, CA).

The Company's property, plant and equipment include land, buildings and structures, machinery and equipment, and construction in progress. As of June 30, 2020, their total book value was KRW 124,294.6 billion, which is an increase of KRW 4,469.1 billion from year-end 2019.

(KRW mil)

Classification		Land	Buildings and structures	Machinery and equipment	Under construction	Other tangible assets	Total
Dec 31, 2019	Book value	97,746	304,696	521,499	239,300	35,014	1,198,255
	- Acquisition cost	98,283	488,394	2,114,160	239,300	100,621	3,040,758
	- Accumulated depreciation (including accumulated impairment loss)	(537)	(183,698)	(1,592,661)	-	(65,607)	(1,842,503)
Change	General acquisition and capital expenditure	441	46,893	140,663	(19,398)	5,972	174,571
	Depreciation ¹⁾	(229)	(14,433)	(110,872)	-	(6,462)	(131,996)
	Disposal/discard/impairment	(267)	(1,203)	(649)	(5)	(547)	(2,671)
	Others ²⁾	391	2,019	627	472	1,278	4,787
Jun 30, 2020	Book value	98,082	337,972	551,268	220,369	35,255	1,242,946
	- Acquisition cost	98,814	536,666	2,236,792	220,369	104,735	3,197,376
	- Accumulated depreciation (including accumulated impairment loss)	(732)	(198,694)	(1,685,524)	-	(69,480)	(1,954,430)

Market value of major tangible assets is omitted as objective assessment is difficult.

¹⁾ Land-depreciation is depreciation expense of right-of-use asset as per K-IFRS 1116.

²⁾ Includes effects of changes in accounting methods, FX rates, and government subsidies.

(Capex)

The Company's capex in 1H20 was KRW 17.1 trillion, which included establishing, adding, and upgrading production lines of the semiconductor and DP businesses. In 2020, we will invest flexibly based on market conditions, whereas investment to embrace demand in emerging businesses, which include system semiconductors, and display, will proceed as planned.

[Capex, by division]

(KRW 100 mil)

Business	Purpose	Period	Assets	Investment
Semiconductor	Establishment, addition, upgrade	January–June 2020	Buildings, facilities, etc.	146,901
DP	Establishment, addition, upgrade	January–June 2020	Buildings, facilities, etc.	16,298
Other	Establishment, addition, upgrade	January–June 2020	Buildings, facilities, etc.	7,579
Total				170,778

5. Sales and distribution

A. Sales

In 1H20, the Company recorded total revenue of KRW 108,291.3 billion, a decrease of 0.2% year-on-year. By Division, when compared to the previous year, revenue of the CE Division, IM Division, and Harman Division decreased by 4.3%, 11.9%, and 22.7%, respectively, while that of DS increased by 11.4%.

(KRW 100 mil)

Division	Sales types	Product categories	1H20	2019	2018
CE	Goods, products, services, other	TVs, monitors, refrigerators, washing machines, air conditioners, etc.	204,704	453,228	426,498
IM	Goods, products, services, other	HHPs, Network systems, computers, etc.	467,568	1,072,662	1,006,777
DS	Semiconductor	Goods, products, services, other	358,753	649,391	862,910
	DP	Goods, products, services, other	133,103	310,539	324,650
	DS total		491,815	955,180	1,185,656
Harman	Goods, products, services, other	Digital cockpit, telematics, speakers, etc.	36,438	100,771	88,437
Others	-	-	(117,612)	(277,832)	(269,654)
Total			1,082,913	2,304,009	2,437,714

Includes sales between Divisions.

CE data for 2019 and 2018 are restated to include the Health & Medical Equipment Business.

(1) Sales, by major product (on a consolidated basis)

(KRW 100 mil)

Classification	1H20	2019	2018
Image devices	109,618	261,775	252,939
Mobile devices	447,498	1,023,318	965,194
Memory	277,546	502,163	723,753
Display panels	133,103	310,539	324,650

Includes sales between Divisions

(2) Sales, by type

(KRW 100 mil)

Classification	1H20	2019	2018
Products	1,017,353	2,188,604	2,380,547
Services and other sales	65,560	115,405	57,167
Total	1,082,913	2,304,009	2,437,714

Other sales consists of royalty income, etc.

(3) Sales, by region (on a separate basis)

(KRW 100 mil)

Classification	1H20	2019	2018
Domestic	107,647	203,009	168,213
Americas	208,520	437,434	464,124
Europe	96,561	191,970	192,783
Asia and Africa	156,600	329,705	330,903
China	210,592	385,611	547,796
Total	779,920	1,547,729	1,703,819

Domestic consumption and exports on a separate basis.

B. Sales channels

(1) Domestic

Seller	Sales channel	Consumer
Manufacturer and buyer	Exclusive agencies	Consumer
	Distributor (general merchandise stores, discount stores, department stores, home-shopping, internet, etc.)	
	Telecommunication service provider (SKT Co., Ltd., KT Corp., LG Uplus Corp.)	
	B2B and online channels	

(2) Overseas

Seller	Sales channel	Consumer			
Production subsidiaries	Regional sales office	Consumer			
			Retailer		
			Dealer	Retailer	
			Distributor	Dealer	
	Telecommunication service provider, automotive OEM				
	Regional distribution office		Regional sales office	Retailer	
				Dealer	Retailer
				Distributor	Dealer
Direct sales					

(3) Sales ratio (global), by Channel

Channel	Wholesale	Retail	Special/direct sales	Others
Ratio	18%	28%	48%	6%

C. Sales methods and conditions

(1) Domestic

Classification	Channel	Collection	Incidental expense sharing
Exclusive	Retailer	Credit agreement (cash, 30 day credit) (credit applied within 100% of collateral)	Case specific cost sharing as determined by mutual agreement
Distributor	General merchandise store, discount store, department store, home shopping, internet, etc.	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
Telecommunication service provider	SKT Co., Ltd., KT Corp. LG Uplus Corp.	Case specific and contract specific	N/A
B2B and online channels	Corporate clients, etc.	Case specific and contract specific	N/A

(2) Overseas

Classification	Channel	Collection	Incidental expense sharing
Retailer	Retail store	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
Dealer	General merchandise store, discount store, department store	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
Distributor	Direct sales to local distributors	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
B2B	Corporate clients, etc.	Case specific and contract specific	N/A

D. Sales strategy

- Expand market leadership based on premium products such as smart devices
- Provide differentiated value to customers through brand, products, and services
- Strengthen marketing activities to boost demand from customer/market

E. Major customers

In 1H20, major customers included Apple, Deutsche Telekom, Hong Kong Techtronics, Huawei, and Verizon (listed alphabetically). Sales to the five major customers accounted for approximately 12% of total sales.

6. Long-term contracts

As of June 30, 2020, there were no long-term contracts that have a significant impact on the Company's financial statement.

7. Financial risk management

A. Financial risk management policy

The Company's financial risk management focuses on minimizing market risk, credit risk, and liquidity risk arising from operating activities. To mitigate these risks, the Company closely monitors each risk factor and operates corresponding financial risk management policies and program. The Company's use of derivative instruments for hedging risks are included in this program.

The finance team mainly carries out the Company's financial risk management. After implementing the global financial risk management policies, the finance team periodically measures, evaluates, and hedges financial risks.

Meanwhile, the Company manages liquidity risk by operating local finance centers at each major region (United States, United Kingdom, Singapore, China, Brazil, and Russia) and manage capital as a whole by each region. Exchange rate risk is managed via monitoring changes in exchange rates and conducting exchange transactions through an agency.

The Company's assets that are under financial risk management are comprised of cash and cash equivalents, short-term financial instruments, financial assets at amortized cost, trade receivables and other. The Company's liabilities under financial risk management are comprised of trade payables, borrowings, and other.

B. Major financial risks

(1) Market risk

(Foreign exchange risk)

The Company operates internationally and is exposed to foreign exchange risks as it conducts transactions in currencies other than the functional currency of each entity. Major currencies that are exposed to foreign exchange risk include USD, EUR, INR, and others.

The Company focuses on minimizing the impact of foreign exchange fluctuation by maintaining the equal amount of assets and liabilities denominated in each foreign currency, irrespective of foreign exchange fluctuation considerations. To prevent exchange position, the Company's foreign exchange management policy requires normal business transactions, including import and export, as well as financing transactions such as depositing and borrowing, to be in local currency or for the cash-in currency to be matched up with the cash-out currency.

In order to effectively manage foreign exchange risk, the Company periodically monitors and evaluates exchange rate risk and strictly prohibits speculative foreign exchange transactions.

(Interest rate risk)

Risk of changes in interest rates for floating interest rate financial instruments is defined as the risk that the fair value of components of the consolidated statement of financial position, and future cash flows of interest income (expenses) of a financial instrument, will fluctuate because of changes in market interest rates. The Company's position with regard to interest rate risk exposure is mainly driven by its floating interest rate debt obligations and interest-bearing deposits. The Company implemented policies and operates to minimize uncertainty arising from changes in interest rates and financial expenses.

(Price risk)

The Company's investment portfolio consists of direct and indirect investments in equity securities classified as financial assets at fair value through other comprehensive income and financial assets at fair value through profit or loss, which is in line with the Company's strategy.

As of June 30, 2020, a price fluctuation in relation to marketable equity instruments (listed shares) by 1% would result in changes in other comprehensive income (before income tax effects) of KRW 47,701 million (June 30, 2019: KRW 34,792 million), and in profit or loss (before income tax effects) of KRW 2,216 million (June 30, 2019: KRW 289 million).

(2) Credit risk

Credit risk arises during the normal course of transactions and investing activities where clients or other parties fail to discharge an obligation. The Company sets and manages the client's and counterparty's credit limit, and evaluates their financial credit rating on a periodic basis based on the client's and counterparty's financial conditions, default history and other important factors. Adequate insurance coverage is maintained for trade receivables related to trading partners situated in higher risk countries.

Credit risk can arise from transactions with financial institutions which include financial instrument transactions such as cash and cash equivalents, savings, and derivative instruments. To minimize such risk, the Company transacts only with banks which have strong international credit rating (S&P A and above), and all new transactions with financial institutions with no prior transaction history are approved, managed and monitored by the Company's finance team and the local finance center. The Company generally enters into a financial agreement with no restrictions, such as debt ratio covenants, provision of collateral, and loans or borrowings repayment. The Company requires separate approval for contracts with restrictions.

The Company estimates that its maximum exposure to credit risk is the carrying amount of its financial assets, net of impairment losses.

(3) Liquidity risk

Due to the nature of the Company's business that requires making large investments, maintaining adequate level of liquidity risk is crucial. The Company maintains and manages adequate level of liquidity by periodically forecasting its capital balances, estimating required cash, managing income and expenses, and others.

The Company efficiently manages its liquidity risk by periodically forecasting projected cash flows and by utilizing regional cash pooling, which allows for the use of internal funds when there is a shortage of cash in a region. The cash pooling program allows sharing of surplus funds among entities and contributes to minimizing liquidity risk and strengthening the Company's competitive position by reducing capital operation expenses and financial expenses.

In addition, the Company's headquarters provides payment guarantees to overseas subsidiaries to secure credit limit to brace for a potential large-scale liquidity need.

(4) Capital risk

The purpose of capital management is to protect our capability of continuously providing profit to our shareholders and stakeholders and to maintain a sound capital structure. To this end, the Company monitors capital on the basis of credit rating and the ratio of total liabilities to total equity.

As of June 30, 2020, the Company has an AA- and Aa3 credit rating from S&P and Moody's, respectively, and the figures for total liabilities and total equity are as follows:

	(KRW mil)	
	Jun 30, 2020	Dec 31, 2019
Total liabilities	88,151,682	89,684,076
Total equity	269,807,817	262,880,421
Total liabilities to equity ratio	32.7%	34.1%

8. Derivative instruments and put options

The company holds convertible preferred shares of Corning Incorporated and its value as of June 30, 2020 is as follows.

(KRW mil)

	Purchasing price	Fair value	Valuation gain	Valuation loss
Convertible preferred shares	2,434,320	3,915,949	1,481,629	-

Fair value is determined using Trinomial Tree model; valuation gains reflected in equity (under other components of equity).

Valuation conducted by Earnest & Young Global Limited

To manage foreign exchange risk, SEC's subsidiaries hedge their foreign currency positions by trading currency forward contracts of currencies other than won. Overseas subsidiaries buy or sell currency forwards through a bank in the purpose of trade.

As of June 30, 2020, the Company had 2,418 currency forward contracts involving 34 foreign currencies including USD/EUR/JPY. Currency forwards as of June 30, 2020 were as follows.

(KRW mil)

	Asset	Liabilities	Valuation gain	Valuation loss
Currency forwards	59,054	65,473	635,475	439,278

9. Major contracts

Account	Contract information	Contents
Ericsson	Type	Patent cross-license agreement
	Date	Jan 25, 2014
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
Google	Type	Patent cross-license agreement
	Date	Jan 25, 2014 / indefinite term
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
	Others	Permanent license contract (including patent applications in the next 10 years)
Cisco	Type	Patent cross-license agreement
	Date	Jan 23, 2014
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
Global Foundries Inc.	Type	Process technology license agreement
	Date	Feb 28, 2014
	Purpose and contents	Expand customer base of 14nm process
InterDigital	Type	Patent license agreement
	Date	Jun 3, 2014
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through patent licensing
HP	Type	Sales of printing solutions business
	Date	Sep 12, 2016
	Purpose and contents	Concentrate on our core competencies and advance business structure
	Others	Transaction value: USD 1.05 billion
Qualcomm	Type	Patent cross-license agreement (amendment to the existing agreement)
	Date	Jan 1, 2018–Dec 31, 2023
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing and signing of covenant not to sue
	Others	-
Apple	Type	Withdrawal of lawsuit agreement
	Date	Jun 26, 2018
	Purpose and contents	Withdraw from all lawsuits in the United States
	Others	-

Account	Contract information	Contents
Nokia	Type	Patent license agreement
	Date	Oct 19, 2018
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through patent licensing
	Others	-
Huawei	Type	Cross license agreement
	Date	Feb 28, 2019
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
	Others	-
Microsoft	Type	Patent cross-license agreement
	Date	Feb 11, 2019
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
	Others	-
Google	Type	EMADA
	Date	Feb 27, 2019–Dec 31, 2020 (extended)
	Purpose and contents	Licensing agreement for using Google apps (Play Store, YouTube, etc.) in 31 European countries (EEA)
	Others	-
AMD	Type	Technology licensing agreement
	Date	May 30, 2019
	Purpose and contents	Secure mobile graphics design for mobile products and other applications
	Others	-
Sharp	Type	Patent cross-license agreement
	Date	July 30, 2019
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
	Others	-

Information that may be referenced or used in other IP disputes, including contract amount, is excluded.

10. Research and development activities

A. Summary of activities and R&D expenditures

The Company is leading the global market by continuously developing creative and innovative products and the future technology through shifting its way of thinking and understanding customer demand. The Company is doing its utmost to cement its position in the global IT industry and become a worldwide leader in industrial technology by creating and securing next-generation technology.

As of June 30, 2020, the Company's R&D expenses were KRW 10,585.1 billion. Among this, KRW 10,577.6 billion was recognized as expenditures, excluding KRW 7.4 billion of government subsidies.

[R&D expenses]

		(KRW mil)		
		1H20	2019	2018
Total R&D expenditure		10,585,084	20,207,612	18,662,029
(Government subsidies)		(7,448)	(14,677)	(11,645)
R&D expenditure		10,577,636	20,192,935	18,650,384
Accounting	Capitalization of development expenses (intangible asset)	-	(285,699)	(296,304)
	R&D costs (expenses)	10,577,636	19,907,236	18,354,080
R&D expenses/sales ratio ¹⁾		9.8%	8.8%	7.7%

Consolidated basis in conformity with K-IFRS.

1) Calculated using total R&D expenditure, which includes government subsidies.

B. R&D organization and operations

(Domestic)

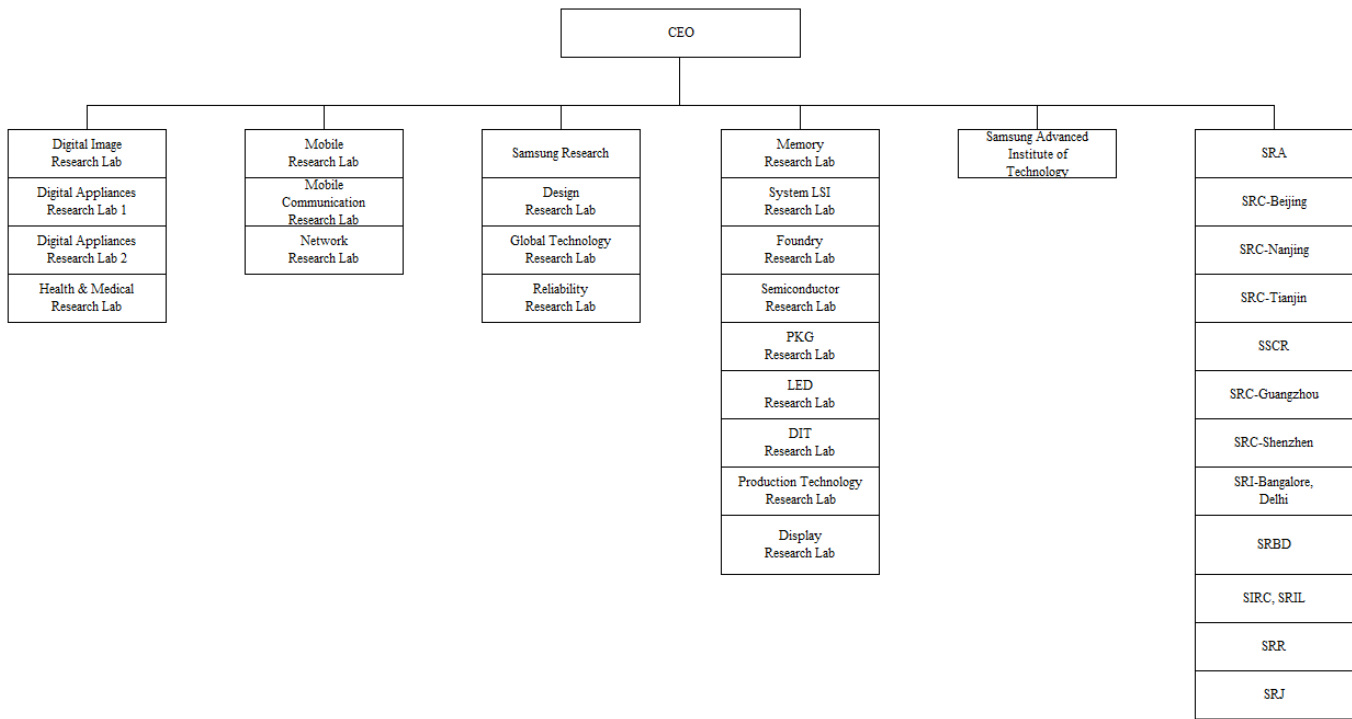
The Company operates three levels of R&D organizations; a business unit development team under each Division that develops market ready technologies with a 1–2 year outlook, a research institute under each business unit that develops mid-to-long term technology with a 3–5 year outlook, and the Samsung Advanced Institute of Technology that develops core technology as seeds for future growth engines.

Samsung Advanced Institute of Technology is the central research institute of Samsung Electronics that has been established to lead the Company into the future and serve as an incubator of cutting-edge technology. It has a creative R&D system and provides R&D direction for promising growth sectors at the Company level, exploring future growth engines and strengthening technological competitiveness of core businesses.

(Overseas)

The Company operates R&D organizations in the US (SRA), Russia (SRR), Israel (SRIL and SIRC), India (SRI-Bangalore and SRI-Delhi), Japan (SRJ), China (SSCR, SRC-Beijing, SRC-Nanjing, SRC-Tianjin, SRC-Guangzhou, and SRC-Shenzhen), Bangladesh (SRBD) to carry out research activities for product development and basic technological research.

The Company has established AI centers in Cambridge (United Kingdom), Moscow (Russia), Toronto (Canada), Montreal (Canada), and New York (United States), so our global team of researchers can collaborate with international experts to strengthen capabilities in AI technology.



As of June 30, 2020.

Refer to 『G. Subsidiaries subject to consolidated financial statements』 in 『I. Corporate Overview』 for more details about overseas R&D organizations.

C. R&D results

CE Division	
Research project	Details
Visual Display	
QLED TV 8K February 2019–June 2020	<ul style="list-style-type: none"> □ Flat QLED 8K TV (65/75/85") □ Specs and features <ul style="list-style-type: none"> - Blends well with walls: flat design and Infinity screen; no border between screen and bezel—a world's first. - Innovative form factor: metal stand which gives a floating impression - QLED 8K enables picture quality close to real life, high resolution via AI upscaling, True Reality picture quality in any given environment - Multi-sound channel and Object Tracking Sound+ synchronize video and sound, maximizing surround sound experience - Wide range of content, multimedia experiences, and entertainment-specific functions provide convenient and colorful experiences
QLED TV April 2017–June 2020	<ul style="list-style-type: none"> □ Flat QLED 4K TV (55/65/75/82/85") □ Specs and features <ul style="list-style-type: none"> - Flagship QLED maximizes viewing experience with the highest picture quality within 4K (AI/brightness/viewing angle) and OTS - Maximizes immersive experience with the highest level of brightness contrast, free viewing angle, life-like color, and optimal brightness - Optimal viewing experience by identifying user context based on voice recognition and AI technologies
UHD TV February 2017–June 2020	<ul style="list-style-type: none"> □ Flat UHD TV (43/50/55/58/65/70/75/82/85") □ Specs and features <ul style="list-style-type: none"> - UHD Smart TV with slim, bezel-less design provides colors close to real-life - UHD picture quality expresses picture quality of original content through Dynamic Crystal Color and Dual LED - Provides a multi-media screen experience, rich content, and complete smart experience via smart home experience
Life Style TV May 2017–April 2020	<ul style="list-style-type: none"> □ The SERO (43") <ul style="list-style-type: none"> - Simple, modern vertical screen that rotates 360 degrees with flat-type speaker - Easily installed in any living space, mobile floor stand included □ The Frame (32/43/50/55/65/75") <ul style="list-style-type: none"> - Design resembles a real picture frame; completes a picture frame experience - Exhibit various famous paintings and pictures; adopted lifestyle design which blends in with the interior □ The Serif (43/49/55") <ul style="list-style-type: none"> - I-shaped serif font design; distinct from other products; works as beautiful interior design object □ Outdoor TV (55/65/75") <ul style="list-style-type: none"> - Differentiated product tailored to a lifestyle of relaxing and enjoying entertainment outdoors
AV (HAV) April 2018–March 2020	<ul style="list-style-type: none"> □ Soundbar <ul style="list-style-type: none"> - Bar-shaped audio product well suited to TVs - Adopted AI solution enabling voice recognition - Adopted 3D surround system, creating enriching sounds close to first-hand experiences
LCD monitor January 2019–May 2020	<ul style="list-style-type: none"> □ Space monitor <ul style="list-style-type: none"> - Requires minimal space to allow extra space for the user - Integrated arm stand minimizes space need for monitor and frame design that blends into the surroundings □ Gaming monitor <ul style="list-style-type: none"> - Gaming graphics that are comfortable to the eye and, at the same time, highly immersive - High scan ratio provides smooth images without burn-in - Smooth graphics without screen tearing via refresh rate sync supported by Free-Sync □ UHD monitor <ul style="list-style-type: none"> - 3-sided bezel-less design enhances immersive experience - Wide viewing angle and high color gamut allows clear screen without color distortion
Signage October 2019	<ul style="list-style-type: none"> □ LCD-based B2B Smart Signage (LFD, Video Wall, etc.) (49/55/65/75/85/98") □ Indoor / outdoor signage using LED
Home appliances	
Bespoke refrigerator May 2019	<ul style="list-style-type: none"> □ T-Type · SBS · Kimchi · BMF · Ladder 1Door (24" R/F/Kimchi) · 18" New 1Door □ Specs and features <ul style="list-style-type: none"> - Customers can configure designs in many ways, Easy design changes - Can set up combinations of fridge/freezer/kimchi refrigerators between similar models
SBS refrigerator February 2019, February 2020	<ul style="list-style-type: none"> □ RS5000RC new SBS platform <ul style="list-style-type: none"> - Large capacity: 617 ℓ (2 door plumbing), Flex Zone → 0/1/3 degree mono Flat duct → Twin cooling look, Horizontal hairline → improved quality and style □ Flat door, glass door, triple filter for water purifier, energy efficiency level 1, 2 <ul style="list-style-type: none"> - Differentiated new CMF, advantage in volume and storage, new CMF (glam white), large-volume - Water purifier segment, ice volume, flat duct (internal design & capacity↑)

CE Division

Research project	Details
FDR refrigerator March 2020	<ul style="list-style-type: none"> □ 26.6 Cu ft ↑, anti-finger print, sleek edge door design, minimal dispenser □ Specs and features <ul style="list-style-type: none"> - Expanded mass-market sales by introducing new model with new D/I - Increased internal space by up to 2 cf. by reducing insulation thickness and unused space with Space Max Technology - Enables a change into a social kitchen for entertainment and socialization - Improving UI and strengthening usability via interface and s/w upgrade
Chef Collection refrigerator June 2020	<ul style="list-style-type: none"> □ High-end, premium refrigerator <ul style="list-style-type: none"> - Premium Bespoke design and new CMF - Features water & ice solution <ul style="list-style-type: none"> · Auto fill pitcher, auto ice maker (dual mode: cocktail Ice, standard Ice) - FDSR energy efficiency grade 1
Grande AI washer January 2020	<ul style="list-style-type: none"> □ Grande AI 23kg drum washer and Grande AI dryer □ Specs and features <ul style="list-style-type: none"> - Automatic detergent dispenser senses weight and dispenses the right amount of detergent, senses cleaning requirement of laundry and automatically controls washing, rinsing time - Interactive alert box with written letters, heavy spin-dry reducing time and energy for laundry
Grande AI dryer February 2018	<ul style="list-style-type: none"> □ Large capacity (14kg) □ Specs and features <ul style="list-style-type: none"> - Rich air flows from 360 “air holes” ensures large amount of laundry is dried up evenly - Quickly heats up to the “magic 60 degrees”, an optimal temperature for garments - “Hole-in-one filter” gets rid of dust and lint - Smart Control - Emits cleaner air with self-cleaning heat-exchanger
Wind-Free™ Gallery floor-standing air conditioner January 2019	<ul style="list-style-type: none"> □ Floor-standing (56.9/62.6/75.5/81.8/92.5m²) □ Specs and features <ul style="list-style-type: none"> - Developed next-gen wind-free platform with the highest level of energy efficiency (56.9m² single duct model achieved energy efficiency grade 2) - Equipped with wind-free panel 1.5 times larger than previous model and strong booster wind - Booster purification: Filter with 99.95% dust collection efficiency, Design resembling that of furniture, fits comfortably into the surroundings
Wind-Free™ wall-mount wide air conditioner October 2019	<ul style="list-style-type: none"> □ Wide air conditioner (24.4/29.3/39.6/49.5m²) □ Specs and features <ul style="list-style-type: none"> - Secured cost competitiveness by developing new integrated QMD-based platform, strengthened product competitiveness - 12% larger fans cools the air faster - Wind-free ultra-energy-efficient technology saves up to 77% on electricity - PM1.0 wind-free filtration system removing particles as small as ultra-fine dust
Jet cordless vacuum January 2019	<ul style="list-style-type: none"> □ Cordless vacuum (up to 200W suction) □ Specs and features <ul style="list-style-type: none"> - Washable multi-cyclone dust collector, Prevents 99.999% of the fine dust from leaking out - Equipped with a brush that removes dust and works as a mop, LED display for monitoring - Floor-standing for convenient storage
Pro Range oven February 2019	<ul style="list-style-type: none"> □ Pro Range (36") □ Specs and features <ul style="list-style-type: none"> - 22K BTU Dual Burner: 22K dual power burners offering intense heat, which cuts cooking time, and precise control when needed - Dual Fan Convection: Allows optimized even cooking with two fans - Dual Infrared Broil Burner: Two infrared broil burner delivers even cooking - Steam Cook: Brings the perfect texture to food, making the outside crispy and keeping the inside moist - SmartHome & IoT
Cube air purifier February 2018	<ul style="list-style-type: none"> □ Specs and features <ul style="list-style-type: none"> - Flexible Air Purifier: single module for smaller spaces, stackable to expand coverage - Differentiated filter removes 99.999% of ultrafine dust - Differentiated air flow: strong high-pass purifying system, quiet and healthy wind-free purifying system - Easy-to-control tailored purification with SmartThings App - Displays purification index in colors and numbers
Air Dresser clothing care September 2018-February 2019	<ul style="list-style-type: none"> □ 18" Air Dresser <ul style="list-style-type: none"> - Cares for inner/outer garment at the same time with exclusive hangers and air shower - Ultra-fine dust filter collects dust from garments - Odor decomposing filter: eliminates odors from garments and odors remaining in the machine □ 24" large-capacity model (can hold long dresses) <ul style="list-style-type: none"> - Long clothing care zone, holds 5 hangers, compared to 3 for 18" model - Real-care (inner-garment care, low noise level), real purification with ultra-fine dust filter, real odor elimination with odor decomposing filter, real-sanitization with jet steam, wrinkle care, real dehumidification dehumidifies the room even with the door closed

IM Division

Research project	Details
Mobile	
Galaxy S10 March 2019 (5G: April 2019)	<ul style="list-style-type: none"> □ Galaxy S10e · S10 · S10+ · S10 5G (5.8/6.1/6.4/6.7") □ Specs and features <ul style="list-style-type: none"> - Design: Full Front Punch Hole Infinity Display - Platform (H/W, S/W): Makalu (Europe), SM8150 (North America), Android 9 - World's first model using commercialized 5G technology - Combination of triple cameras delivers zoom, tele, ultra wide function: wide (12M)+tele (12M)+ultra wide (16M) - Supports HDR10+ video shooting on mobile for the first time in the world - Dynamic AMOLED display delivers near-original colors, supports HDR - On-screen fingerprint recognition sensor using ultrasound
Galaxy S20 March 2020	<ul style="list-style-type: none"> □ Galaxy S20 · S20+ · S20 Ultra 5G □ Specs and features <ul style="list-style-type: none"> - Screen: S20 6.2", S20+ 6.7", S20 U 6.9" - Size (W x H x D): S20 69.1 x 151.7 x 7.9mm; S20+ 73.7 x 161.9 x 7.8mm; S20 U 76.0 x 166.9 x 8.8mm - Platform (H/W, S/W): Exynos990 · SDM865, Android 10.0, One UI 2.1 - Smartphone that will change the future of mobile and pictures: significantly higher resolution and 8K video recording allows taking pictures and videos in unprecedented quality and easy and swift sharing with 5G - Pictures and videos with significantly higher resolution: S20 · S20+ 64MP, S20 U 108MP - 100x zoom, the highest space zoom yet in smartphones: S20 U 108MP - Take higher quality and clearer pictures and videos with three times bigger sensor (using AI technology) - Take videos in 8K, the highest quality yet in smartphones - Super steady feature reduces blur from shaking but captures dynamic movements - Single take allows the best pictures and videos with a single shot
Galaxy Note10 July 2019	<ul style="list-style-type: none"> □ Galaxy Note10 · 10+ (6.3/6.8") □ Specs and features <ul style="list-style-type: none"> - Design: Full Front Punch Hole Infinity Display - Platform (H/W, S/W): Makalu (7nm), Android 9.0 - Upgraded S Pen <ul style="list-style-type: none"> • Enhanced usability with higher battery capacity and improved BT latency • Offers new feature using 6-axis sensor - Quad camera supports high-resolution and maximum viewing angle shooting under wide range of illuminance <ul style="list-style-type: none"> • Wide (12M) + tele (12M) + superwide (16M) + ToF
Galaxy Fold September 2019	<ul style="list-style-type: none"> □ Creating a new market and securing market share by developing world's first in-foldable smart phone <ul style="list-style-type: none"> - 7.3" QXGA+(1,536×2,152) 1.5R in-foldable display - Secured standard technology by developing hinge for in-foldable phones, a world's first (released Feb 2019) □ Offers new user experience tailored to foldable smart phones <ul style="list-style-type: none"> - Can use up to three apps with multi-active window function, offering unrivaled multitasking environment - When folding or unfolding the phone, provides app using experience with smooth changes between screens with minimal interruption
Galaxy Z flip February 2020	<ul style="list-style-type: none"> □ Galaxy Z Flip □ Specs and features <ul style="list-style-type: none"> - Design: New style with innovative foldable display - Screen: Main 6.7" flexible ultra-thin glass (2,636 x 1080) cover 1.1"super AMOLED (300 x 112) - Size (W x H x D): (unfolded) 73.6 x 167.3 x 6.9–7.2mm (folded) 73.6 x 87.4 x 15.4–17.3mm - Platform (H/W, S/W): SDM855+, Android 10.0 - Ultra-thin glass technology allows foldable glass display—a first among Galaxy models—and enhances durability - Easy to carry with a new form factor allowing compact size by flip fold - Free-stop feature enables users to freely control the angle of the flip, allowing Flex Mode experience - Screen ratio 21.9:9 enhances suitability of multi active window

IM Division

Research project	Details
Galaxy buds+ January 2020	<ul style="list-style-type: none"> □ Galaxy Buds+ □ Specs and features <ul style="list-style-type: none"> - Design: Canal-type TWS (true wireless stereo) - Platform (HW, SW): MCU (BCM43015), OS (RTOS), BT 5.0 - Battery: Earbuds (85mAh x 2), cradle (270mAh) - Powerful mid to low keys and highest sound quality with application of 2-way speaker (woofer & tweeter) - 2 outer beamforming mic and 1 inner mic optimizes phone call sound - Improved errors in proximity sensor by adding grip sensor - Longest play time compared to products in the same class, with upgraded battery: 22 hours for streaming (earbuds 11H & cradle 11H)
Galaxy Watch3 BT June 2020	<ul style="list-style-type: none"> □ Galaxy Watch3 BT □ Specs and features <ul style="list-style-type: none"> - Design: Premium smart watch resembling the design of a real watch - Display: 1.36" (45mm), 1.2" (41mm) OLED (360 x 360) - Size (W x H x D): 45.0mm x 46.2mm x 11.1mm (45mm) 41.0mm x 42.5mm x 11.3mm (41mm) - Platform (H/W, S/W): Exynos9110, Tizen 5.5 - Maximizing synergy effect by launching with N series in the second half - Expanding portfolio to titanium models (high-end segment, derivative project in process) - Identifying and have included differentiated health-related services <ul style="list-style-type: none"> • Blood pressure, ECG, fall detection features commercialized globally
Network	
RAN S/W PKG April 2019	<ul style="list-style-type: none"> □ SVR18.3 5G S/W pkg <ul style="list-style-type: none"> - S/W PKG to commercialize domestic 5G NR for the first time in the world - Commercialized 5G NSA by using LTE network links in the Seoul and the capital area - Supports 5G base station (3.5GHz, 28GHz, 39GHz 5G Massive MIMO)
Core S/W PKG March 2020	<ul style="list-style-type: none"> □ SVR19B 5G core S/W pkg <ul style="list-style-type: none"> - Developed containerized-based 5G Core Network Function <ul style="list-style-type: none"> • Efficient and quick service distribution and maintenance cost reduction possible by flexibly containerizing host OS resource • Provision possible to global operators aiming to run services based on public cloud (eg, Amazon Web Services, Azure: Microsoft Azure, GCP: Google Cloud Platform)
Base stations September 2019, February 2020, May 2020	<ul style="list-style-type: none"> □ Developed 5G NR DU (September 2019) <ul style="list-style-type: none"> - New dual CPU based main card and first 5G SoC modem using channel card - Single HW can accommodate a combination of LTE, NR above and NR below products, offering different channels at the same time - Supports high capacity, low power consumption (including power saving) and virtualization/non virtualization S/W structure □ Developed 26GHz 5G NR RFIC Chip (February 2020) <ul style="list-style-type: none"> - 2nd generation RFIC Chip, following SEC's 1st generation products (28GHz/39GHz) (2nd generation has improved evm function, power efficiency, and mass production) - Components for global 5G NR commercialization can be used for all carriers using 26GHz □ Developed FSU10 (May 2020) <ul style="list-style-type: none"> - FSU (fronthaul switch unit) to support vRAN business - Makes spectrum sharing between LTE and NR (below 6GHz) possible <ul style="list-style-type: none"> • One RU fits both LTE DU and NR vRAN via spectrum sharing • Efficient network operation between LTE-NR and 5G application possible before migration to O-RAN base in the future

DS Division

Research project	Details
Memory	
DRAM for mobile July 2018–February 2020	<ul style="list-style-type: none"> □ Mass production of 16Gb LPDDR4X DRAM, with highest speed and capacity in the world <ul style="list-style-type: none"> - Mass production of 2nd generation 10-nano class (1y) 16Gb lineup—a world's first - Speed and productivity 2 times higher compared to 20-nano DRAM □ Mass production of 2nd generation 10-nano class (1y) 12Gb LPDDR5 DRAM for mobile, with highest speed and capacity in the world <ul style="list-style-type: none"> - Next-generation mobile solution with better speed, capacity, and power efficiency - Contributed to introducing 5G smartphones with 1.3 times the speed (5,500Mbps), and 30% lower power consumption - 12Gb LPDDR5-based line up (6GB, 12GB) provided for the first time □ World's first mass production of 16GB LPDDR5 mobile DRAM: highest speed and capacity in the world <ul style="list-style-type: none"> - Performance improved by 30%, capacity by 2 times, and 20% less power consumption vs 8GB LPDDR4X - Gaming performance (picture quality, haptic feedback) same or better than PCs possible with smartphones

DS Division

Research project	Details
DRAM for server October 2018–March 2019	<ul style="list-style-type: none"> □ Mass Production of 1st generation 10-nano class (1x) 256GB 3DS DDR4 DRAM for servers, highest capacity in the world <ul style="list-style-type: none"> - World's first mass production of 256GB DRAM with ultra-high performance and capacity - 2 times the capacity and 30% increase in power efficiency compared to 128GB □ Development of 3rd generation 10-nano class (1z) 8Gb DDR4 DRAM—world's best <ul style="list-style-type: none"> - Secured ultra-fast, ultra-power-efficient solutions for mass production of DDR5 · LPDDR5 - Efficiency up by more than 20% compared to 2nd generation (1y-nano) DRAM - Expand portion of 1z-nano DRAM lineup in the next-generation products by mass production beginning in September in Pyeongtaek
HBM January 2019–February 2019	<ul style="list-style-type: none"> □ Development of 12-stack 3DS TSV PKG, with world's highest HBM DRAM capacity <ul style="list-style-type: none"> - Development of highest performance and capacity 12GB HBM DRAM for supercomputers—industry's first - 1.5 times the capacity and convenience of system design improved with 8GB package - Strengthened leadership in next-generation HPC DRAM by breakthrough in package technology - Plan to mass produce 24GB HBM, the industry's highest, to meet customer needs □ Rollout of ultra-fast DRAM for AI and next-generation super computer for the first time in the world (16GB HBM2E 'Flashbolt') <ul style="list-style-type: none"> - Stacked 8 10-nano (1y) 16Gb DRAM, enabling 16GB, the highest capacity - Able to send 82 Full HD movies (410GB) at 3.2Gb/sec - Continue to lead market expansion by supplying 2nd generation HBM2 and 3rd generation HBM2E at the same time
eStorage February 2019–March 2020	<ul style="list-style-type: none"> □ Mass production of next-generation smartphone memory, eUFS 3.0—world's first <ul style="list-style-type: none"> - embedded 5th generation (9x-layers) cell stacked 512Gb 3 bit V-NAND for the first time in the industry - reading and writing 2 times faster compared to eUFS 2.0 - Securing early foothold and high growth in next-generation ultra-high-resolution mobile market □ Industry's only mass production of 512GB eUFS 3.1, with a writing speed of 1200MB/s <ul style="list-style-type: none"> - 3 times the performance compared to 512GB eUFS 3.0 (continued writing speed of 410MB/s) - Smartphone memory storage (1200MB/s) is 2 times faster than PC (SSD 540MB/s)
SSD for PC June 2018–July 2019	<ul style="list-style-type: none"> □ Mass production of 5th generation (9x-layers) 256Gb V-NAND-based PC SSD—fastest in the world <ul style="list-style-type: none"> - World's first mass production of SSD with 9x and higher cell stacked V-NAND - 1.4 times the speed and 30% higher productivity than before - Secure capabilities for development of 1Tb and QLC V-NAND-based next-generation products □ Mass production of 1Tb 4bit V-NAND-based PC SSD—world's first <ul style="list-style-type: none"> - Industry's first mass production of 4th generation (64-layers) cell stacked 1 Tb 4bit V-NAND - Same reading and writing speed compared to 3bit SSD - Lead market growth by securing an edge in ultra-high-capacity and cost competitiveness □ Mass production of 6th-generation (1xx) 256Gb V-NAND-based PC SSD—fastest in the world <ul style="list-style-type: none"> - Exclusive mass production of higher than 100 layers cell single process stacked V-NAND - 1.2 times the speed and productivity higher by more than 20% - Lead the storage market with competitive edge in ultra-fast, ultra-power-efficient products
SSD for server January 2018–September 2019	<ul style="list-style-type: none"> □ Mass production of 30.72TB SAS SSD for next-generation servers—world's first <ul style="list-style-type: none"> - Exclusively support 2.5-inch 30.72TB by applying 512Gb V-NAND - 2 times the capacity and 2 times the random reading speed - Leading the growth of SAS market by continuously expanding ultra-high-capacity lineup □ Mass production of 8TB NF1 NVMe SSD next-generation servers—world's first <ul style="list-style-type: none"> - Support 8TB in NF1 size by applying 512Gb V-NAND - Expanding system memory capacity by 3 times by applying 8TB lineup - Successful in creating NF1 market by exclusively introducing 8TB lineup □ Mass production of 5th generation (9x-layer) V-NAND-based 30.72TB NVMe SSD for servers—highest speed and capacity in the world <ul style="list-style-type: none"> - Secured next-generation SSD solution with improved speed, capacity, and efficiency - Introduced 8GB/s PCIe Gen4 SSD with 2.2 times the speed - Exclusively offers top 3 SW (Never Die SSD, FIP, ML) solution
Brand SSD January 2020–June 2020	<ul style="list-style-type: none"> □ Launched 'T7 Touch', premium portable SSD—highest performance in the industry <ul style="list-style-type: none"> - 5th generation 512Gb V-NAND with world's highest performance and NVMe controller with ultra-fast embedded interface - Supports reading and writing speed of 1,050MB/s and 1,000MB/s, respectively, up to 9.5 times faster than external HDD (110MB/s) and about 2 times faster than the previous model (SEC's portable SSD T5) □ Global launch of high-capacity 4-bit SSD '870 QVO' <ul style="list-style-type: none"> - Introduced 4 SATA SSD models including 1/2/4TB and 8TB model, the highest in the industry - Provides optimal solution to customers with need for high-performance/high-capacity computing environment, with quick data-process speed close to the maximum speed of SATA interface - Boasts high speed/capacity, reasonable price, launched in 40 countries in several phases
Z-SSD January 2018	<ul style="list-style-type: none"> □ Mass production of 800GB NVMe Z-SSD for supercomputers, world's first <ul style="list-style-type: none"> - 5 times the response time and 35 times longer life compared to NVMe SSD - Achieved the most reliable, durable, and highest capacity in system - Expanded market by introducing 2nd generation Dual Port Z-SSD lineup

DS Division

Research project	Details
EUV March 2020	<ul style="list-style-type: none"> □ Supplied 1 million 1st generation 10-nano class (D1x) DRAM modules <ul style="list-style-type: none"> - Mass production of EUV DRAM—the only company in the industry with EUV DRAM mass production system - Secured 10-nano class advanced process and mass production, enabling next-generation DRAM in a timely manner. - EUV process applied to all 4th generation 10-nano class DRAM, and is now expanding to 5th generation and 6th generation products
System LSI	
Mobile Image Sensor February 2018–June 2020	<ul style="list-style-type: none"> □ Mobile image sensor (12MP, 16MP, 20MP, 32MP, 43.7MP, 48MP, 64MP, 108MP) □ Dual pixel-based phase detecting auto focus technology (some products) <ul style="list-style-type: none"> - Fast and accurate auto-focus regardless of environment - State-of-the-art technologies such as 3D noise reduction, HDR, etc. □ DRAM embedded, 3-layer stacked structure (some products) <ul style="list-style-type: none"> - Fast storage of large amount of images - Supports super-slow motion (960 frames per second) □ ISOCELL Plus, technology improving image sensors (some products) <ul style="list-style-type: none"> - Minimizes loss of light from reflection or absorption by using different material and higher walls between color filters - Sensitivity under low light improved compared to previous generation □ Enables better response to demand for high-resolution, multi camera adoption <ul style="list-style-type: none"> - Ultra-small pixel size and tetracell/nonacell features enables high resolution and smaller size, leading to flexibility in design □ Total solution providing image sensor and S/W algorithm together <ul style="list-style-type: none"> - Save S/W purchasing cost and time needed to optimize sensor and AP - Supports features including refocusing, shooting under low light □ Introduced 1.2um 50MP image sensor with dual pixel and tetracell technology <ul style="list-style-type: none"> - 2 photodiode per pixel makes 100MP-level image possible - Tetracell takes bright and sophisticated image with 4 times the sensitivity under low light compared to previous generation
Exynos Mobile January 2018–October 2019	<ul style="list-style-type: none"> □ Modem-integrated one-chip SoC <ul style="list-style-type: none"> - Integrated 6/8CA LTE, 5G modem, etc. - Supports latest communication features, such as EN-DC, Wi-Fi - Modem/CPU/GPUNPU performance continues to improve compared to previous generation □ Achieved deep-learning algorithm, supporting intelligent image processing <ul style="list-style-type: none"> - Analyzes images accurately; face recognition function improved - Taking high-resolution images and videos possible under low-lighting and/or movement
Exynos i August 2018–May 2019	<ul style="list-style-type: none"> □ Chip (S5JS100) supports the latest NB-IoT standard, lower power consumption, enhanced security <ul style="list-style-type: none"> - Exceeded transmission range of 10km, defined by the standard, with low power consumption - Encryption, decryption, copy protection feature applied to enhance data protection - Integrated modem, CPU, RF, PMIC, GNSS in one chip □ SoC (S5JT100) exclusively for short-distance IoT, with low power consumption and stronger security <ul style="list-style-type: none"> - Supports the latest short-range communication, including Bluetooth 5.0, Zigbee 3.0 - Encryption, decryption, copy protection feature applied to enhance data protection - Wider operating temperature range (operates under the temperature as high as 125 °C) - Enhanced power efficiency with 28-nano process - Processor, memory, communication feature in one package
Exynos Auto V9 January 2019	<ul style="list-style-type: none"> □ S5AHR80 □ Automotive infotainment, Exynos Auto V9 <ul style="list-style-type: none"> - Controls 6 displays and 12 cameras simultaneously via Octa-core CPU - Individually supports dashboard, CID, and HUD with 3 GPUs - Recognizes audio, face, and motion with an NPU - Strengthened safety by supporting ASIL-B standards
5G modem April 2019–October 2019	<ul style="list-style-type: none"> □ Commercialization (SA55100, S5M5500, S5M5800) of world's first modem solution for 5G smartphones <ul style="list-style-type: none"> - Exynos modem 5100, RF 5500, SM 5800 - 1.7 times the data communication speed (compared to LTE) - New RF, SM embedded, power efficiency for transmission improved □ Top-of-class 7-nano 5G modem (SA55123) <ul style="list-style-type: none"> - Up to 2 times faster than the previous product in 5G environment under 6GHz - Achieved high-performing 5G with lower electricity consumption and optimal chip-size area - Highest speed in 4G network: 3.0Gbps - Supports global Sub-6GHz/mmWave range

DS Division

Research project	Details
PMIC May 2019–March 2020	<ul style="list-style-type: none"> □ PDIC for fast-charging TA, supporting USB PD(S2MM101) <ul style="list-style-type: none"> - Supports USB-PD 3.0 standard and fast-charging protocol - Moisture detection; surge protection function □ World's first all-in-one chip that combines the function of PDIC and SE(S3SSE8A) <ul style="list-style-type: none"> - Supports Type-C certification, filtering out uncertified products - Provides high-tech security functions—stores security keys/certificates; supports encryption and decryption □ Industry's first integrated power management chip (S2MUA01, S2MUB01) for wireless earphones <ul style="list-style-type: none"> - Power management chip optimized for small batteries by integrating multiple chips - Optimal solution for the rapidly growing wireless earphone market
Display driver IC January 2019	<ul style="list-style-type: none"> □ New DDI, S6CT93P <ul style="list-style-type: none"> - Optimized to ultra-high-definition 8K TVs and increased performance efficiency - Supports a smart equalizer to improve signal quality and development efficiency
Security-related semiconductor March 2020-June 2020	<ul style="list-style-type: none"> □ Integrated security solution (S3K250AF)—top-of-the-class in mobile industry <ul style="list-style-type: none"> - Applied self-developed S/W in H/W security chip, which received 'EAL 5+' in International Security Evaluation Criteria (cc) - Foundation for new mobile services, with mobile security solution □ Features EAL 6+ (the highest level in mobile device) certified S3FV9RR and our own S/W <ul style="list-style-type: none"> - Can be independently embedded in wide range of processors, can be used in different smart devices - Stronger security with differentiated features including hardware secure boot, device authorization, and more
Foundry	
8-inch process RF/ fingerprint recognition March 2018	<ul style="list-style-type: none"> □ Development of 8-inch process that best suits RF and fingerprint recognition products <ul style="list-style-type: none"> - Diversify 8-inch foundry products by including RF or fingerprint sensor solutions on top of embedded flash memory chips, power semiconductors, display drivers, CMOS image sensors - Boost product quality and customer convenience
7nm EUV process September 2018	<ul style="list-style-type: none"> □ 7LPP (Low Power Plus) process applied with EUV technology <ul style="list-style-type: none"> - Extreme ultraviolet (EUV) lithography technology <ul style="list-style-type: none"> • 13.6nm wavelength, 1/14 of ArF, enables advanced circuit pattern realization • High performance and productivity enabled by reduction of multi-patterning process - Delivers up to a 40% increase in area efficiency with 20% higher performance or up to 50% lower power consumption compared to 10nm process
Ship eMRAM solution products (based on 28nm FD-SOI process) March 2019	<ul style="list-style-type: none"> □ Combined low-power process and next-generation embedded memory technology <ul style="list-style-type: none"> - Maximized power efficiency as the product uses low motion power and eliminates standby power and an erase cycle - Supports record speed about 1000 times faster than the previous eFlash □ Embedded to system semiconductor by using minimum layers <ul style="list-style-type: none"> - Reduced production costs thanks to a simpler design structure □ Optimal for MCU/IoT/AI thanks to low-power and small size
5nm EUV process April 2019	<ul style="list-style-type: none"> □ Developed 5nm EUV process with EUV lithography <ul style="list-style-type: none"> - 25% increase in logic area efficiency with 20% lower power consumption or 10% higher performance compared to 7nm by optimizing cell architecture - Previous 7nm customers can utilize the same IP in the 5nm EUV process
Display panel	
Hole in Display OLED for Galaxy S10 March 2019	<ul style="list-style-type: none"> □ Maximized screen size via world's first commercialization of Flexible Hole in Display <ul style="list-style-type: none"> - One S10 6.1" 3K QHD+(3,040×1,440) Hole, Two S10+ 6.4" Holes □ Offers a comfortable display by significantly decreasing blue light <ul style="list-style-type: none"> - Decreased blue light emission 42% from S9 (TUV Rheinland Eye Comfort Certification)
15.6" UHD OLED for NPC May 2019	<ul style="list-style-type: none"> □ Developed world's first 4K OLED display for NPC <ul style="list-style-type: none"> - 15.6" UHD (3,840 x 2,160), 16:9 - Blue light reduction, shorter response time, wide field of view allow vivid images
4K high-resolution OLED for smartphones June 2019	<ul style="list-style-type: none"> □ Developed world's first 4K mobile OLED display <ul style="list-style-type: none"> - 6.5" UHD (1,644×3,840), 643ppi, 16M Color - Can enjoy original cinematic movie ratio of 21:9
Curved LCD for gaming monitors June 2019	<ul style="list-style-type: none"> □ Developed world's first 240Hz Curved LCD display <ul style="list-style-type: none"> - 27" FHD (1920×1080), 16:9 - High refresh rate of 240Hz, supports G-sync, allowing uninterrupted gaming environment - Curvature of 1500R, wide viewing angle allow highly-immersive gaming experience
Foldable OLED for Galaxy Fold September 2019	<ul style="list-style-type: none"> □ Display innovation by developing the world's first foldable display <ul style="list-style-type: none"> - In-foldable AMOLED (radius: 1.5R) - 7.3" QXGA+ (1,536×2,152), 4:3 - Decreased display thickness by approximately 50% (compared to existing panels) by developing polymer composite material
Foldable OLED for Galaxy Z Flip February 2020	<ul style="list-style-type: none"> □ Mass production of world's first glass type window foldable display <ul style="list-style-type: none"> - 6.7" Full HD+(1,080x 2,640) - Improved durability and applied camera hole (first in foldable phones) by using UTG (ultra-thin glass)

DS Division

Research project	Details
WQ+ high-speed OLED for Galaxy S20 March 2020	□ Maximize touch feature with WQ+ resolution, 120Hz, high speed - S20 6.23"/6.67"/6.87" QHD+(3,200×1,440) - Harmful blue light less than 6.5%, Eye Care Display certified (SGS, international certification institution)

11. Other information

A. Intellectual property

Intellectual property activities are an integral part of our R&D strategies—SEC registered its first US patent in 1984 and currently holds 190,242 patents around the world. The Company holds the highest number of its patents (cumulative number) in the US and aims to address conflicts in the US more effectively.

<Number of patents registered in each country (cumulative as of June 30, 2020)>

	Korea	US	Europe	China	Japan	Others
Number	39,607	75,472	35,784	17,076	10,076	12,227

In 1H20, the Company invested KRW 10.6 trillion in R&D and registered 3,240 domestic and 4,234 US patents.

<Number of patent registrations per year>

(Unit: No. of patents)

	1H20	2019	2018
Korea	3,240	5,075	3,068
US	4,234	8,729	8,073

These patents are mostly related to smartphones, smart TVs, memory, and system LSI products for the Company's strategic business products or for future use. These patents not only protect the Company's business but also play a role in keeping similar technology and patents, as well as competitors, in check. Additionally, the Company is focusing on securing early patents in new technologies ahead of others, in order to protect opportunities and have the freedom to operate when entering new businesses.

The Company has signed cross-licensing agreements with Google (signed in January 2014), Nokia (October 2018), Western Digital (December 2016), Qualcomm (January 2018), and Huawei (February 2019), and Sharp (July 2019) through which the Company has secured an extensive patent protection in mainstay businesses as well as in the fields of new business.

The Company has also been focusing on securing design patents to protect its original design applied to smartphones and TVs. In 2020, the Company acquired 254 US patents, in part for the aforementioned purposes.

B. Environmental regulations

The Company strictly abides by environmental regulations on products and in the workplace, as prescribed by law. In addition, in accordance with “the low carbon green growth policy” of the Korean government, the Company reports “the amount of CO₂ emission and energy use” to the government and provides related information to stakeholders by providing various reports, including the Samsung Sustainability Report.

☞ See 『11. Green Management』 of 『XI. Other Information』 for more details about Green Technology Certification.

(Environmental regulation of products)

Environmental regulation of products are becoming stricter, reflecting the concerns of governments and regulators about potential direct and indirect impact of products to consumers' health and safety as consumers. Accordingly, the Company is working to minimize the environmental impact throughout the entire life cycle of products from the development stage of components and products to manufacturing, distribution, use, and disposal. The Company offers "Eco-Partner Certification" to suppliers for components free of harmful substances, and runs an "eco-design evaluation" system to reflect eco-friendly elements on products (reduced use of resources, energy and harmful substances, and the use of eco-friendly materials) at the development stage, and operates a "waste electronics collection recycle system" in Europe, North America, Korea, and India for collecting and recycling waste electronics. These activities are in line with domestic and foreign environmental laws on electronics and are a differentiation factor for the Company and its products.

Relevant laws are as follows:

1. law on collection and recycle of waste electronics (eg, EU WEEE Directive)
2. limit on the use of harmful substances (eg, EU RoHS Directive, REACH Regulation)
3. regulation on energy efficiency (eg, EU ErP Directive)

(Environmental Regulations in the Workplace)

The Company operates environmental pollution prevention facilities to reduce air pollution, water pollution, and waste disposal, and to minimize the discharge of pollutants, thereby minimizing impact on the surrounding environment.

Environmental management of workplace is supervised by the relevant government authorities. All production facilities, domestic and overseas, have acquired the International Occupational Health and Safety Management System Certification (ISO 14001, OHSAS18001) to strengthen compliance.

Major Relevant Domestic and International Laws are as follows:

1. Regulations related to emission of pollutants: Water Quality and Ecosystem Conservation Act, Clean Air Conservation Act, Wastes Control Act, Noise and Vibration Control Act, Environmental Impact Assessment Act
2. Management of greenhouse gas emission: Act on Allocation and Trading of Greenhouse Gas Emission, Framework Act on Low Carbon, Green Growth
3. Others: Toxic Chemicals Control Act, Act on the Registration and Evaluation, etc. of Chemical Substances, Odor Control Law, Soil Environment Conservation Act

(Greenhouse gas emission and energy consumption management)

The Company is a “controlled entity” according to Article 42 (Coping with Climate Change and Management of Targets for Energy) Paragraph 6 of Korea’s “Framework Act on Low Carbon, Green Growth.” Thus, the Company has been reporting the amount of greenhouse gas emission and energy consumption, verified by a third-party, to the authorities and disclosing it to stakeholders according to Article 44 (Reporting on Quantity of Greenhouse Gases Emitted and Quantity of Energy Consumed) of the same Act since May 2011.

The reported amount of greenhouse gas emission and energy use are provided below:

(Unit: tCO₂-eq, TJ)

	2019	2018	2017
Greenhouse gas (tCO ₂ -eq)	16,174,205	15,919,775	13,315,430
Energy (TJ)	242,376	237,099	211,570

See 『11. Green Management』 of 『XI. Other Information』 for parent-based data.

Domestic manufacturing facilities, office buildings, buildings owned by the Company, leased buildings, etc.

Reported Greenhouse gas emission excludes ozone depletion substances (ODS).

Amounts may differ by third-party organization verification results.

Data for 2018 and 2017 are restated as per revision of 『Guideline for Emission Reporting and Certification in Greenhouse Gas Emission Trading Scheme』 .

From 2015, in accordance with the Article 8 (Designation of Business Entities Eligible for Allocation) of the Act on the Allocation and Trading of Greenhouse-Gas Emission Permits, the Company is an eligible business entity under the Act.

III. Financial Affairs

1. Consolidated financial statements

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30, 2020 KRW	December 31, 2019 KRW	June 30, 2020 USD	December 31, 2019 USD
Assets					
Current assets					
Cash and cash equivalents	3, 25	36,109,613	26,885,999	29,923,736	22,280,204
Short-term financial instruments	3, 25	75,127,611	76,252,052	62,257,626	63,189,441
Short-term financial assets at amortized cost	3, 25	1,224,565	3,914,216	1,014,787	3,243,678
Short-term financial assets at fair value through profit or loss	3, 4, 25	582,641	1,727,436	482,830	1,431,512
Trade receivables	3, 25	32,989,762	35,131,343	27,338,341	29,113,052
Non-trade receivables	3, 25	3,702,782	4,179,120	3,068,465	3,463,202
Advance payments		1,486,402	1,426,833	1,231,769	1,182,405
Prepaid expenses		2,572,807	2,406,220	2,132,064	1,994,014
Inventories	5	29,645,529	26,766,464	24,567,003	22,181,146
Other current assets	3, 25	2,695,133	2,695,577	2,233,434	2,233,802
		186,136,845	181,385,260	154,250,055	150,312,456
Non-current assets					
Financial assets at fair value through other comprehensive income	3, 4, 25	9,511,923	8,920,712	7,882,451	7,392,520
Financial assets at fair value through profit or loss	3, 4, 25	1,128,261	1,049,004	934,981	869,301
Investment in associates and joint ventures	6	7,693,878	7,591,612	6,375,853	6,291,106
Property, plant and equipment	7	124,294,578	119,825,474	103,001,883	99,298,373
Intangible assets	8	19,608,254	20,703,504	16,249,197	17,156,821
Net defined benefit assets	11	184,409	589,832	152,818	488,789
Deferred income tax assets		4,441,779	4,505,049	3,680,865	3,733,297
Other non-current assets	3	4,959,572	7,994,050	4,109,956	6,624,603
		171,822,654	171,179,237	142,388,004	141,854,810
Total assets		357,959,499	352,564,497	296,638,059	292,167,266

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30, 2020 KRW	December 31, 2019 KRW	June 30, 2020 USD	December 31, 2019 USD
Liabilities and Equity					
Current liabilities					
Trade payables	3, 25	9,545,977	8,718,222	7,910,672	7,224,718
Short-term borrowings	3, 9, 25	12,776,348	14,393,468	10,587,653	11,927,747
Other payables	3, 25	10,076,985	12,002,513	8,350,714	9,946,383
Advances received	14	956,376	1,072,062	792,541	888,409
Withholdings	3	840,737	897,355	696,712	743,631
Accrued expenses	3, 14	17,803,662	19,359,624	14,753,747	16,043,159
Current income tax liabilities		3,334,471	1,387,773	2,763,248	1,150,036
Current portion of long-term liabilities	3, 9, 10, 25	788,871	846,090	653,731	701,148
Provisions	12	4,743,028	4,068,627	3,930,508	3,371,637
Other current liabilities	3, 14	997,266	1,037,030	826,425	859,378
		61,863,721	63,782,764	51,265,951	52,856,246
Non-current liabilities					
Debentures	3, 10, 25	1,010,166	975,298	837,116	808,221
Long-term borrowings	3, 9, 25	2,109,366	2,197,181	1,748,014	1,820,786
Long-term other payables	3, 25	1,986,768	2,184,249	1,646,418	1,810,069
Net defined benefit liabilities	11	531,556	470,780	440,496	390,131
Deferred income tax liabilities		17,602,407	17,053,808	14,586,968	14,132,349
Long-term provisions	12	867,382	611,100	718,792	506,413
Other non-current liabilities	3, 14	2,180,316	2,408,896	1,806,810	1,996,233
		26,287,961	25,901,312	21,784,614	21,464,202
Total liabilities		88,151,682	89,684,076	73,050,565	74,320,448

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30, 2020 KRW	December 31, 2019 KRW	June 30, 2020 USD	December 31, 2019 USD
Equity attributable to owners of the Company					
Preference shares	15	119,467	119,467	99,001	99,001
Ordinary shares	15	778,047	778,047	644,761	644,761
Share premium		4,403,893	4,403,893	3,649,469	3,649,469
Retained earnings	16	260,165,053	254,582,894	215,596,615	210,970,726
Other components of equity	17	(3,721,095)	(4,968,829)	(3,083,640)	(4,117,627)
		261,745,365	254,915,472	216,906,206	211,246,330
Non-controlling interests		8,062,452	7,964,949	6,681,288	6,600,488
Total equity		269,807,817	262,880,421	223,587,494	217,846,818
Total liabilities and equity		357,959,499	352,564,497	296,638,059	292,167,266

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF PROFIT OR LOSS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the three month period ended June 30,				For the six month period ended June 30,			
		2020	2019	2020	2019	2020	2019	2020	2019
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Revenue	26	52,966,142	56,127,104	43,892,601	46,512,064	108,291,320	108,512,650	89,740,116	89,923,530
Cost of sales	18	31,906,198	35,944,684	26,440,401	29,787,061	66,712,892	68,691,136	55,284,419	56,923,773
Gross profit		21,059,944	20,182,420	17,452,200	16,725,003	41,578,428	39,821,514	34,455,697	32,999,757
Selling and administrative expenses	18, 19	12,913,652	13,585,355	10,701,436	11,258,071	26,984,791	26,991,167	22,362,072	22,367,356
Operating profit	26	8,146,292	6,597,065	6,750,764	5,466,932	14,593,637	12,830,347	12,093,625	10,632,401
Other non-operating income	20	290,279	360,159	240,552	298,461	605,785	681,941	502,009	565,119
Other non-operating expense	20	1,060,839	312,883	879,108	259,284	1,424,894	570,014	1,180,798	472,366
Share of net profit of associates and joint ventures	6	86,222	64,492	71,451	53,444	146,866	142,173	121,707	117,818
Financial income	21	1,769,583	3,151,583	1,466,439	2,611,691	5,560,961	5,068,119	4,608,322	4,199,908
Financial expense	21	1,461,840	2,681,052	1,211,415	2,221,765	4,955,806	4,060,224	4,106,835	3,364,674
Profit before income tax		7,769,697	7,179,364	6,438,683	5,949,479	14,526,549	14,092,342	12,038,030	11,678,206
Income tax expense	22	2,214,614	1,998,788	1,835,232	1,656,379	4,086,540	3,868,181	3,386,481	3,205,529
Profit for the period		5,555,083	5,180,576	4,603,451	4,293,100	10,440,009	10,224,161	8,651,549	8,472,677
Profit attributable to									
Owners of the Company		5,488,964	5,064,530	4,548,659	4,196,934	10,378,563	10,172,020	8,600,629	8,429,468
Non-controlling interests		66,119	116,046	54,792	96,166	61,446	52,141	50,920	43,209
Earnings per share (in Korean won, in US dollars)	23								
- Basic		808	746	0.67	0.62	1,528	1,497	1.27	1.24
- Diluted		808	746	0.67	0.62	1,528	1,497	1.27	1.24

The above consolidated statements of profit or loss should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the three month period ended June 30,				For the six month period ended June 30,			
		2020	2019	2020	2019	2020	2019	2020	2019
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Profit for the period		5,555,083	5,180,576	4,603,451	4,293,100	10,440,009	10,224,161	8,651,549	8,472,677
Other comprehensive income (loss)									
Items that will not be reclassified subsequently to profit or loss:									
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	1,498,950	181,816	1,242,167	150,669	389,339	789,897	322,642	654,581
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	21,823	363	18,085	301	(25,151)	(1,757)	(20,842)	(1,456)
Remeasurement of net defined benefit liabilities, net of tax	17	(4,756)	(17,226)	(3,941)	(14,275)	(37,452)	(54,460)	(31,036)	(45,131)
Items that may be reclassified subsequently to profit or loss:									
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	(4,661)	27,704	(3,863)	22,958	24,283	65,419	20,123	54,212
Foreign currency translation, net of tax	17	(1,259,232)	1,567,642	(1,043,515)	1,299,092	969,311	3,777,018	803,260	3,129,983
Gain (loss) on valuation of cash flow hedge derivatives	17	3,910	(4,015)	3,240	(3,327)	(25,128)	5,527	(20,823)	4,580
Other comprehensive income for the period, net of tax		256,034	1,756,284	212,173	1,455,418	1,295,202	4,581,644	1,073,324	3,796,769
Total comprehensive income for the period		5,811,117	6,936,860	4,815,624	5,748,518	11,735,211	14,805,805	9,724,873	12,269,446
Comprehensive income attributable to:									
Owners of the Company		5,673,105	6,795,351	4,701,255	5,631,251	11,644,605	14,632,924	9,649,788	12,126,181
Non-controlling interests		138,012	141,509	114,369	117,267	90,606	172,881	75,085	143,265

The above consolidated statements of comprehensive income should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In millions of Korean won)

2019 KRW	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2019		119,467	778,047	4,403,893	242,698,956	(7,931,370)	240,068,993	7,684,184	247,753,177
Profit for the period		-	-	-	10,172,020	-	10,172,020	52,141	10,224,161
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	14	734,697	734,711	55,186	789,897
Share of other comprehensive income of associates and joint ventures, net of tax		-	-	-	-	63,520	63,520	142	63,662
Foreign currency translation, net of tax		-	-	-	-	3,711,746	3,711,746	65,272	3,777,018
Remeasurement of net defined benefit liabilities, net of tax		-	-	-	-	(54,600)	(54,600)	140	(54,460)
Gain on valuation of cash flow hedge derivatives		-	-	-	-	5,527	5,527	-	5,527
Total comprehensive income		-	-	-	10,172,034	4,460,890	14,632,924	172,881	14,805,805
Dividends		-	-	-	(4,810,032)	-	(4,810,032)	(5,943)	(4,815,975)
Capital transaction under common control		-	-	-	-	722	722	(429)	293
Changes in consolidated entities		-	-	-	-	-	-	(27)	(27)
Other		-	-	-	-	54	54	3,706	3,760
Total transactions with owners		-	-	-	(4,810,032)	776	(4,809,256)	(2,693)	(4,811,949)
Balance as of June 30, 2019		119,467	778,047	4,403,893	248,060,958	(3,469,704)	249,892,661	7,854,372	257,747,033

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In thousands of US dollars (Note 2.3))

2019 USD	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2019		99,001	644,761	3,649,469	201,122,605	(6,572,660)	198,943,176	6,367,819	205,310,995
Profit for the period		-	-	-	8,429,468	-	8,429,468	43,209	8,472,677
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	12	608,837	608,849	45,732	654,581
Share of other comprehensive income of associates and joint ventures, net of tax		-	-	-	-	52,638	52,638	118	52,756
Foreign currency translation, net of tax		-	-	-	-	3,075,893	3,075,893	54,090	3,129,983
Remeasurement of net defined benefit liabilities, net of tax		-	-	-	-	(45,247)	(45,247)	116	(45,131)
Gain on valuation of cash flow hedge derivatives		-	-	-	-	4,580	4,580	-	4,580
Total comprehensive income		-	-	-	8,429,480	3,696,701	12,126,181	143,265	12,269,446
Dividends		-	-	-	(3,986,033)	-	(3,986,033)	(4,925)	(3,990,958)
Capital transaction under common control		-	-	-	-	598	598	(356)	242
Changes in consolidated entities		-	-	-	-	-	-	(22)	(22)
Other		-	-	-	-	45	45	3,071	3,116
Total transactions with owners		-	-	-	(3,986,033)	643	(3,985,390)	(2,232)	(3,987,622)
Balance as of June 30, 2019		99,001	644,761	3,649,469	205,566,052	(2,875,316)	207,083,967	6,508,852	213,592,819

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In millions of Korean won)

2020 KRW	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2020		119,467	778,047	4,403,893	254,582,894	(4,968,829)	254,915,472	7,964,949	262,880,421
Profit for the period		-	-	-	10,378,563	-	10,378,563	61,446	10,440,009
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	13,629	391,139	404,768	(15,429)	389,339
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	-	-	-	-	(1,116)	(1,116)	248	(868)
Foreign currency translation, net of tax	17	-	-	-	-	924,276	924,276	45,035	969,311
Remeasurement of net defined benefit liabilities, net of tax	17	-	-	-	-	(36,758)	(36,758)	(694)	(37,452)
Loss on valuation of cash flow hedge derivatives	17	-	-	-	-	(25,128)	(25,128)	-	(25,128)
Total comprehensive income		-	-	-	10,392,192	1,252,413	11,644,605	90,606	11,735,211
Dividends		-	-	-	(4,810,033)	-	(4,810,033)	(7,074)	(4,817,107)
Capital transaction under common control		-	-	-	-	(842)	(842)	(488)	(1,330)
Changes in consolidated entities		-	-	-	-	-	-	17,838	17,838
Other		-	-	-	-	(3,837)	(3,837)	(3,379)	(7,216)
Total transactions with owners		-	-	-	(4,810,033)	(4,679)	(4,814,712)	6,897	(4,807,815)
Balance as of June 30, 2020		119,467	778,047	4,403,893	260,165,053	(3,721,095)	261,745,365	8,062,452	269,807,817

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In thousands of US dollars (Note 2.3))

2020 USD	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2020		99,001	644,761	3,649,469	210,970,726	(4,117,627)	211,246,330	6,600,488	217,846,818
Profit for the period		-	-	-	8,600,629	-	8,600,629	50,920	8,651,549
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	11,294	324,134	335,428	(12,786)	322,642
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	-	-	-	-	(925)	(925)	206	(719)
Foreign currency translation, net of tax	17	-	-	-	-	765,940	765,940	37,320	803,260
Remeasurement of net defined benefit liabilities, net of tax	17	-	-	-	-	(30,461)	(30,461)	(575)	(31,036)
Loss on valuation of cash flow hedge derivatives	17	-	-	-	-	(20,823)	(20,823)	-	(20,823)
Total comprehensive income		-	-	-	8,611,923	1,037,865	9,649,788	75,085	9,724,873
Dividends		-	-	-	(3,986,034)	-	(3,986,034)	(5,862)	(3,991,896)
Capital transaction under common control		-	-	-	-	(698)	(698)	(404)	(1,102)
Changes in consolidated entities		-	-	-	-	-	-	14,782	14,782
Other		-	-	-	-	(3,180)	(3,180)	(2,801)	(5,981)
Total transactions with owners		-	-	-	(3,986,034)	(3,878)	(3,989,912)	5,715	(3,984,197)
Balance as of June 30, 2020		99,001	644,761	3,649,469	215,596,615	(3,083,640)	216,906,206	6,681,288	223,587,494

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the six month period ended June 30,			
		2020	2019	2020	2019
		KRW	KRW	USD	USD
Operating activities					
Profit for the period		10,440,009	10,224,161	8,651,549	8,472,677
Adjustments	24	19,751,134	17,996,969	16,367,600	14,913,938
Changes in assets and liabilities arising from operating activities	24	(2,462,019)	(7,767,511)	(2,040,255)	(6,436,871)
Cash generated from operations		27,729,124	20,453,619	22,978,894	16,949,744
Interest received		1,078,065	1,068,089	893,383	885,116
Interest paid		(221,418)	(308,217)	(183,487)	(255,417)
Dividends received		173,027	170,601	143,386	141,376
Income tax paid		(2,130,766)	(9,544,916)	(1,765,748)	(7,909,792)
Net cash from operating activities		26,628,032	11,839,176	22,066,428	9,811,027
Investing activities					
Net decrease (increase) in short-term financial instruments		1,551,368	10,169,664	1,285,606	8,427,516
Net decrease (increase) in short-term financial assets at amortized cost		2,196,291	(760,329)	1,820,048	(630,078)
Net decrease (increase) in short-term financial assets at fair value through profit or loss		1,196,698	436,327	991,694	361,581
Disposal of long-term financial instruments		5,780,758	1,186,873	4,790,466	983,552
Acquisition of long-term financial instruments		(2,888,232)	(6,780,511)	(2,393,454)	(5,618,953)
Disposal of financial assets at amortized cost		871,380	22,983	722,105	19,046
Acquisition of financial assets at amortized cost		-	(789,822)	-	(654,519)
Disposal of financial assets at fair value through other comprehensive income		23,281	293	19,293	243
Acquisition of financial assets at fair value through other comprehensive income		(23,363)	(36,810)	(19,361)	(30,504)
Disposal of financial assets at fair value through profit or loss		16,266	39,823	13,479	33,001
Acquisition of financial assets at fair value through profit or loss		(59,850)	(77,684)	(49,597)	(64,376)
Disposal of investment in associates and joint ventures		-	306	-	254
Acquisition of investment in associates and joint ventures		(19,424)	(5,500)	(16,097)	(4,558)
Disposal of property, plant and equipment		134,814	244,343	111,719	202,485
Acquisition of property, plant and equipment		(18,442,051)	(10,685,064)	(15,282,774)	(8,854,624)
Disposal of intangible assets		2,304	3,464	1,909	2,871
Acquisition of intangible assets		(1,379,268)	(561,613)	(1,142,988)	(465,404)
Cash outflow from business combinations		(27,412)	(957,944)	(22,716)	(793,840)
Cash inflow from other investing activities		125,780	22,571	104,234	18,702
Net cash used in investing activities		(10,940,660)	(8,528,630)	(9,066,434)	(7,067,605)

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the six month period ended June 30,			
		2020	2019	2020	2019
		KRW	KRW	USD	USD
Financing activities					
Net increase (decrease) in short-term borrowings		(1,600,261)	(1,726,736)	(1,326,123)	(1,430,932)
Repayment of debentures and long-term borrowings		(423,961)	(335,382)	(351,333)	(277,928)
Dividends paid		(4,816,847)	(4,814,335)	(3,991,681)	(3,989,599)
Net increase (decrease) in non-controlling interests		8,390	293	6,953	243
Net cash used in financing activities		(6,832,679)	(6,876,160)	(5,662,184)	(5,698,216)
Effect of foreign exchange rate changes		368,921	757,040	305,722	627,352
Net increase (decrease) in cash and cash equivalents		9,223,614	(2,808,574)	7,643,532	(2,327,442)
Cash and cash equivalents					
Beginning of the period		26,885,999	30,340,505	22,280,204	25,142,924
End of the period		36,109,613	27,531,931	29,923,736	22,815,482

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

2. Notes to consolidated financial statements

1. General Information

1.1 Company Overview

Samsung Electronics Co., Ltd. (“SEC”) was incorporated under the laws of the Republic of Korea in 1969 and listed its shares on the Korea Stock Exchange in 1975. SEC and its subsidiaries (collectively referred to as the “Company”) operate four business divisions: Consumer Electronics (“CE”), Information technology & Mobile communications (“IM”), Device Solutions (“DS”) and Harman. CE division includes digital TVs, monitors, air conditioners and refrigerators and IM division includes mobile phones, communication systems, and computers. DS division includes semiconductor products such as memory, foundry, and system LSI (“Semiconductor”), and display products such as TFT-LCD and OLED panels (“DP”). Harman division includes connected car systems, audio and visual products, enterprise automation solutions and connected services. The Company is domiciled in the Republic of Korea and is located in Suwon, the Republic of Korea.

These interim consolidated financial statements have been prepared in accordance with Korean International Financial Reporting Standards (“*Korean IFRS*”) 1110, *Consolidated Financial Statements*. SEC, as the controlling Company, consolidates its 244 subsidiaries, including Samsung Display and Samsung Electronics America. The Company also applies the equity method of accounting for its 41 associates and joint ventures, including Samsung Electro-Mechanics Co., Ltd.

1.2 Consolidated Subsidiaries

(A) The consolidated subsidiaries as of June 30, 2020 are as follows:

Area	Subsidiaries	Industry	Percentage of ownership ¹
	Samsung Electronics America, Inc. (SEA)	Sale of electronic devices	100.0
	NeuroLogica Corp.	Manufacture and sale of medical equipment	100.0
	Dacor Holdings, Inc.	Management of overseas subsidiaries	100.0
	Dacor, Inc.	Manufacture and sale of home appliances	100.0
	Dacor Canada Co.	Sale of home appliances	100.0
	EverythingDacor.com, Inc.	Sale of home appliances	100.0
	Distinctive Appliances of California, Inc.	Sale of home appliances	100.0
	Samsung HVAC America, LLC	Sale of air conditioning products	100.0
	SmartThings, Inc.	Sale of smart home electronics	100.0
	Samsung Oak Holdings, Inc. (SHI)	Management of overseas subsidiaries	100.0
	Stellus Technologies, Inc.	Manufacture and sale of semiconductor system	99.9
	Joyent, Inc.	Cloud services	100.0
	TeleWorld Solutions, Inc. (TWS)	Installation of network devices	100.0
America	TWS LATAM B, LLC	Management of overseas subsidiaries	100.0
	TWS LATAM S, LLC	Management of overseas subsidiaries	100.0
	SNB Technologies, Inc. Mexico, S.A. de C.V.	Installation of network devices	100.0
	Prismview, LLC	Manufacture and sale of LED displays	100.0
	Samsung Research America, Inc. (SRA)	R&D	100.0
	Samsung Next LLC (SNX)	Management of overseas subsidiaries	100.0
	Samsung Next Fund LLC (SNXF)	Technology business, venture capital investments	100.0
	Viv Labs, Inc.	AI technology services	100.0
	Samsung Semiconductor, Inc. (SSI)	Sale of semiconductor and display panels	100.0
	Samsung Austin Semiconductor LLC. (SAS)	Manufacture of semiconductors	100.0
	Samsung International, Inc. (SII)	Manufacture of CTV and monitors	100.0
	Samsung Mexicana S.A. de C.V (SAMEX)	Manufacture of electronic devices	100.0
	Samsung Electronics Home Appliances America, LLC (SEHA)	Manufacture of home appliances	100.0
	SEMES America, Inc.	Semiconductor equipment	100.0

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership ¹
	Zhilabs Inc.	Sale of network solutions	100.0
	Samsung Electronics Canada, Inc. (SECA)	Sale of electronic devices	100.0
	AdGear Technologies Inc.	Digital advertising platforms	100.0
	SigMast Communications Inc.	Development of mobile communications software	100.0
	Samsung Electronics Mexico S.A. De C.V. (SEM)	Sale of electronic devices	100.0
	Samsung Electronics Digital Appliance Mexico, S.A. de C.V. (SEDAM)	Manufacture of home appliances	100.0
	Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	Sale of electronic devices	100.0
	Samsung Electronics Latinoamerica (Zona Libre), S. A. (SELA)	Sale of electronic devices	100.0
	Samsung Electronics Venezuela, C.A. (SEVEN)	Marketing and services	100.0
	Samsung Electronica Colombia S.A. (SAMCOL)	Sale of electronic devices	100.0
	Samsung Electronics Panama, S.A. (SEPA)	Consulting	100.0
	Samsung Electronica da Amazonia Ltda. (SEDA)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Argentina S.A. (SEASA)	Marketing and services	100.0
	Samsung Electronics Chile Limitada (SECH)	Sale of electronic devices	100.0
	Samsung Electronics Peru S.A.C. (SEPR)	Sale of electronic devices	100.0
America	Harman International Industries, Inc.	Holding company	100.0
	Harman Becker Automotive Systems, Inc.	Manufacture and sale of audio products, R&D	100.0
	Harman Connected Services, Inc.	Connected service provider	100.0
	Harman Connected Services Engineering Corp.	Connected service provider	100.0
	Harman Connected Services South America S.R.L.	Connected service provider	100.0
	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Manufacture and sale of audio products	100.0
	Harman de Mexico, S. de R.L. de C.V.	Manufacture of audio products	100.0
	Harman do Brasil Industria Eletronica e Participacoes Ltda.	Sale of audio products, R&D	100.0
	Harman Financial Group LLC	Management company	100.0
	Harman International Industries Canada Ltd.	Sale of audio products	100.0
	Harman International Mexico, S. de R.L. de C.V.	Sale of audio products	100.0
	Harman KG Holding, LLC	Management of overseas subsidiaries	100.0
	Harman Professional, Inc.	Sale of audio products, R&D	100.0
	RT SV CO-INVEST, LP	Venture capital investments	99.9
	Beijing Integrated Circuit Industry International Fund, L.P	Venture capital investments	61.4
	China Materialia New Materials 2016 Limited Partnership	Venture capital investments	99.0

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership ¹
Europe/CIS	Samsung Electronics (UK) Ltd. (SEUK)	Sale of electronic devices	100.0
	Samsung Electronics Ltd. (SEL)	Management of overseas subsidiaries	100.0
	Samsung Electronics Holding GmbH (SEHG)	Management of overseas subsidiaries	100.0
	Samsung Semiconductor Europe GmbH (SSEG)	Sale of semiconductor and display panels	100.0
	Samsung Electronics GmbH (SEG)	Sale of electronic devices	100.0
	Samsung Electronics Iberia, S.A. (SESA)	Sale of electronic devices	100.0
	Samsung Electronics France S.A.S. (SEF)	Sale of electronic devices	100.0
	Samsung Electronics Hungarian Private Co., Ltd. (SEH)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Czech and Slovak s.r.o. (SECZ)	Sale of electronic devices	100.0
	Samsung Electronics Italia S.P.A. (SEI)	Sale of electronic devices	100.0
	Samsung Electronics Europe Logistics B.V. (SELS)	Logistics	100.0
	Samsung Electronics Benelux B.V. (SEBN)	Sale of electronic devices	100.0
	Samsung Display Slovakia s.r.o. (SDSK)	Toll processing of display panels	100.0
	Samsung Electronics Romania LLC (SEROM)	Sale of electronic devices	100.0
	Samsung Electronics Polska, SP.Zo.o (SEPOL)	Sale of electronic devices	100.0
	Samsung Electronics Portuguesa S.A. (SEP)	Sale of electronic devices	100.0
	Samsung Electronics Nordic Aktiebolag (SENA)	Sale of electronic devices	100.0
	Samsung Semiconductor Europe Limited (SSEL)	Sale of semiconductor and display panels	100.0
	Samsung Electronics Austria GmbH (SEAG)	Sale of electronic devices	100.0
	Samsung Electronics Switzerland GmbH (SESG)	Sale of electronic devices	100.0
	Samsung Electronics Slovakia s.r.o (SESK)	Manufacture of CTV and monitors	100.0
	Samsung Electronics Baltics SIA (SEB)	Sale of electronic devices	100.0
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	Management of overseas subsidiaries	100.0
	Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	Manufacture of home appliances	100.0
	Samsung Electronics Greece S.M.S.A (SEGR)	Sale of electronic devices	100.0
	Samsung Electronics Air Conditioner Europe B.V. (SEACE)	Sale of air conditioning products	100.0
	Samsung Nanoradio Design Center (SNDC)	R&D	100.0
	Samsung Denmark Research Center ApS (SDRC)	R&D	100.0
	Samsung Cambridge Solution Centre Limited (SCSC)	R&D	100.0
	Zhilabs, S.L.	Development and sale of network solutions	100.0
	Foodient Ltd.	R&D	100.0
	Samsung Electronics Overseas B.V. (SEO)	Sale of electronic devices	100.0
	Samsung Electronics Rus Company LLC (SERC)	Sale of electronic devices	100.0
	Samsung Electronics Ukraine Company LLC (SEUC)	Sale of electronic devices	100.0
Samsung R&D Institute Rus LLC (SRR)	R&D	100.0	
Samsung Electronics Central Eurasia LLP (SECE)	Sale of electronic devices	100.0	
Samsung Electronics Caucasus Co., Ltd. (SECC)	Marketing	100.0	
Samsung Electronics Rus Kaluga LLC (SERK)	Manufacture of CTV	100.0	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership ¹
	AKG Acoustics GmbH	Manufacture and sale of audio products	100.0
	AMX UK Limited	Sale of audio products	100.0
	Arcam Limited	Management of overseas subsidiaries	100.0
	A&R Cambridge Limited	Sale of audio products	100.0
	Harman Audio Iberia Espana Sociedad Limitada	Sale of audio products	100.0
	Harman Automotive UK Limited	Manufacture of audio products	100.0
	Harman Becker Automotive Systems GmbH	Manufacture and sale of audio products, R&D	100.0
	Harman Becker Automotive Systems Italy S.R.L.	Sale of audio products	100.0
	Harman Becker Automotive Systems Manufacturing Kft	Manufacture of audio products, R&D	100.0
	Harman Belgium SA	Sale of audio products	100.0
	Harman Connected Services AB.	Connected service provider	100.0
	Harman Finland Oy	Connected service provider	100.0
	Harman Connected Services GmbH	Connected service provider	100.0
	Harman Connected Services Limited	Connected service provider	100.0
	Harman Connected Services Poland Sp.zoo	Connected service provider	100.0
	Harman Connected Services UK Ltd.	Connected service provider	100.0
	Harman Consumer Nederland B.V.	Sale of audio products	100.0
	Harman Deutschland GmbH	Sale of audio products	100.0
Europe/CIS	Harman Finance International GP S.a.r.l	Management of overseas subsidiaries	100.0
	Harman France SNC	Sale of audio products	100.0
	Harman Holding GmbH & Co. KG	Management company	100.0
	Harman Hungary Financing Ltd.	Financing company	100.0
	Harman Inc. & Co. KG	Management of overseas subsidiaries	100.0
	Harman International Estonia OU	R&D	100.0
	Harman International Industries Limited	Sale of audio products, and other.	100.0
	Harman International Romania SRL	R&D	100.0
	Harman Finance International, SCA	Financing company	100.0
	Harman International s.r.o	Manufacture of audio products	100.0
	Harman Management GmbH	Management of overseas subsidiaries	100.0
	Harman Professional Kft	Manufacture of audio products, R&D	100.0
	Martin Manufacturing (UK) Ltd.	Manufacture of audio products	100.0
	Harman Professional Denmark ApS	Sale of audio products, R&D	100.0
	Red Bend Software Ltd.	Software design	100.0
	Red Bend Software SAS	Software design	100.0
	Studer Professional Audio GmbH	Sale of audio products, R&D	100.0
	Harman Connected Services OOO	Connected service provider	100.0
	Harman RUS CIS LLC	Sale of audio products	100.0

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership ¹
Middle East & Africa	Samsung Electronics West Africa Ltd. (SEWA)	Marketing	100.0
	Samsung Electronics East Africa Ltd. (SEEA)	Marketing	100.0
	Samsung Gulf Electronics Co., Ltd. (SGE)	Sale of electronic devices	100.0
	Samsung Electronics Saudi Arabia Ltd.(SESAR)	Sale of electronic devices	100.0
	Samsung Electronics Egypt S.A.E (SEEG)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Israel Ltd. (SEIL)	Marketing	100.0
	Samsung Electronics Tunisia S.A.R.L (SETN)	Marketing	100.0
	Samsung Electronics Pakistan (Private) Ltd. (SEPAK)	Marketing	100.0
	Samsung Electronics South Africa (Pty) Ltd. (SSA)	Sale of electronic devices	100.0
	Samsung Electronics South Africa Production (pty) Ltd. (SSAP)	Manufacture of CTV and monitors	100.0
	Samsung Electronics Turkey (SETK)	Sale of electronic devices	100.0
	Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	R&D	100.0
	Samsung Electronics Levant Co.,Ltd. (SELV)	Sale of electronic devices	100.0
	Samsung Electronics Maghreb Arab (SEMAG)	Sale of electronic devices	100.0
	Corephotonics Ltd.	R&D	100.0
	Global Symphony Technology Group Private Ltd.	Management of overseas subsidiaries	100.0
	Harman Connected Services Morocco	Connected service provider	100.0
	Harman Industries Holdings Mauritius Ltd.	Management of overseas subsidiaries	100.0
	Red Bend Ltd.	Manufacture of audio products	100.0
	Asia (Excluding China)	Samsung Japan Corporation (SJC)	Sale of semiconductor and display panels
Samsung R&D Institute Japan Co., Ltd. (SRJ)		R&D	100.0
Samsung Electronics Japan Co., Ltd. (SEJ)		Sale of electronic devices	100.0
Samsung Electronics Display (M) Sdn. Bhd. (SDMA)		Manufacture of electronic devices	100.0
Samsung Electronics (M) Sdn. Bhd. (SEMA)		Manufacture of home appliances	100.0
Samsung Vina Electronics Co., Ltd. (SAVINA)		Sale of electronic devices	100.0
Samsung Asia Private Ltd. (SAPL)		Sale of electronic devices	100.0
Samsung India Electronics Private Ltd. (SIEL)		Manufacture and sale of electronic devices	100.0
Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)		R&D	100.0
Samsung Nepal Services Pvt, Ltd. (SNSL)		Service	100.0
Samsung Display Noida Private Limited (SDN)		Manufacture of display panels	100.0
Samsung Electronics Australia Pty. Ltd. (SEAU)		Sale of electronic devices	100.0
Samsung Electronics New Zealand Limited (SENZ)		Sale of electronic devices	100.0
PT Samsung Electronics Indonesia (SEIN)		Manufacture and sale of electronic devices	100.0
PT Samsung Telecommunications Indonesia (STIN)		Sale of electronic devices and services	100.0
Thai Samsung Electronics Co., Ltd. (TSE)		Manufacture and sale of electronic devices	91.8
Laos Samsung Electronics Sole Co., Ltd. (LSE)		Marketing	100.0
Samsung Electronics Philippines Corporation (SEPCO)		Sale of electronic devices	100.0
Samsung Display Vietnam Co., Ltd. (SDV)		Manufacture of display panels	100.0
Samsung Malaysia Electronics Sdn. Bhd. (SME)		Sale of electronic devices	100.0
Samsung R&D Institute BanglaDesh Limited (SRBD)		R&D	100.0
Samsung Electronics Vietnam Co., Ltd. (SEV)		Manufacture of electronic devices	100.0
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)		Manufacture of communication equipment	100.0
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)		Manufacture and sale of electronic devices	100.0
Harman Connected Services Corp. India Pvt. Ltd.		Connected service provider	100.0
Harman International (India) Private Limited		Sale of audio products, R&D	100.0
Harman International Industries PTY Ltd.		Management of overseas subsidiaries	100.0
Harman International Japan Co., Ltd.		Sale of audio products, R&D	100.0
Harman Singapore Pte. Ltd.		Sale of audio products	100.0

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership ¹
China	Samsung Display Dongguan Co., Ltd. (SDD)	Manufacture of display panels	100.0
	Samsung Display Tianjin Co., Ltd. (SDT)	Manufacture of display panels	95.0
	Samsung Electronics Hong Kong Co., Ltd. (SEHK)	Sale of electronic devices	100.0
	Suzhou Samsung Electronics Co., Ltd. (SSEC)	Manufacture of home appliances	88.3
	Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	Manufacture of home appliances	100.0
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	Sale of electronic devices	100.0
	Samsung Mobile R&D Center China-Guangzhou (SRC-Guangzhou)	R&D	100.0
	Samsung Tianjin Mobile Development Center (SRC-Tianjin)	R&D	100.0
	Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	R&D	100.0
	Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	Toll processing of semiconductors	100.0
	SEMES (XIAN) Co., Ltd.	Semiconductor equipment services	100.0
	Samsung Electronics Huizhou Co., Ltd. (SEHZ)	Manufacture of electronic devices	100.0
	Tianjin Samsung Electronics Co., Ltd. (TSEC)	Manufacture of CTV and monitors	91.2
	Samsung Electronics Taiwan Co., Ltd. (SET)	Sale of electronic devices	100.0
	Beijing Samsung Telecom R&D Center (SRC-Beijing)	R&D	100.0
	Tianjin Samsung Telecom Technology Co., Ltd. (TSTC)	Manufacture of communication equipment	90.0
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Sale of semiconductor and display panels	100.0
	Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	Manufacture of electronic devices	100.0
	Samsung Suzhou Module Co., Ltd. (SSM)	Manufacture of display panels	100.0
	Samsung Suzhou LCD Co., Ltd. (SSL)	Manufacture of display panels	60.0
	Shenzhen Samsung Electronics Telecommunication Co., Ltd. (SSET)	Manufacture of communication equipment	100.0
	Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	R&D	100.0
	Samsung Electronics China R&D Center (SRC-Nanjing)	R&D	100.0
	Samsung (China) Semiconductor Co., Ltd. (SCS)	Manufacture of semiconductors	100.0
	Samsung Semiconductor Xian Co., Ltd. (SSCX)	Sale of semiconductor and display panels	100.0
	Tianjin Samsung LED Co., Ltd. (TSLED)	Manufacture of LED	100.0
	Harman (China) Technologies Co., Ltd.	Manufacture of audio products	100.0
	Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	Sale of audio products	100.0
	Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	Manufacture of audio products, R&D	100.0
	Harman Commercial (Shanghai) Co., Ltd.	Sale of audio products	100.0
	Harman Connected Services Solutions (Chengdu) Co., Ltd.	Connected service provider	100.0
	Harman Holding Limited	Sale of audio products	100.0
	Harman International (China) Holdings Co., Ltd.	Sale of audio products, R&D	100.0
Harman Technology (Shenzhen) Co., Ltd.	Sale of audio products, R&D	100.0	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships

Area	Subsidiaries	Industry	Percentage of ownership ¹
Domestic	Samsung Display Co., Ltd.	Manufacture and sale of display panels	84.8
	SU Materials	Manufacture of display components	50.0
	STECO Co., Ltd.	Manufacture of semiconductor components	70.0
	SEMES Co., Ltd.	Manufacture of semiconductor/FPD	91.5
	Samsung Electronics Service Co., Ltd.	Repair services for electronic devices	99.3
	Samsung Electronics Service Customer Satisfaction	Call center for repair services for electronic devices	100.0
	Samsung Electronics Sales Co., Ltd.	Sale of electronic devices	100.0
	Samsung Electronics Logitech Co., Ltd.	General logistics agency	100.0
	Samsung Medison Co., Ltd.	Manufacture and sale of medical equipment	68.5
	Mirero System Co., Ltd.	Development and supply of semiconductor process defect and quality control software	99.9
	Dowooinsys Co., Ltd.	Manufacture of display components	51.8
	Gf-System Co., Ltd.	Manufacture of display components	100.0
	Harman International Korea	Software development and supply, etc.	100.0
	Samsung Venture Capital Union #21	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #22	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #26	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #27	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #28	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #29	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #32	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #33	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #37	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #40	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #42	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #43	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #45	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #48	Technology business, Venture capital investments	99.0
Growth type private equity trust specialized in semiconductors	Investment on semiconductor industry	66.7	
System LSI Mutual benefit private equity trust	Investment on System LSI industry	62.5	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

(B) Summary of financial data of major consolidated subsidiaries is as follows:

(1) 2020

<i>(In millions of Korean won)</i>	As of June 30, 2020		June 30, 2020			
	Assets	Liabilities	For the three month period ended		For the six month period ended	
			Sales	Profit (loss) for the period	Sales	Profit (loss) for the period
Major subsidiaries¹						
Samsung Display	₩ 44,985,200	₩ 4,910,891	₩ 6,214,226	₩ 440,602	₩ 11,565,360	₩ 57,713
Samsung Electronics America (SEA)	37,304,997	14,757,827	6,760,335	360,723	15,655,607	1,081,518
Samsung Electronics Vietnam THAINGUYEN (SEVT)	16,324,336	2,881,173	5,814,871	495,558	14,003,848	1,242,120
Harman and its subsidiaries ²	14,618,843	5,450,511	1,535,867	(714,152)	3,626,104	(933,998)
Samsung (China) Semiconductor (SCS)	14,420,106	4,110,606	1,281,964	284,259	2,256,719	394,028
Samsung (CHINA) Investment (SCIC)	14,296,718	11,185,075	596,478	55,331	1,204,910	108,341
Samsung Electronics Vietnam (SEV)	13,658,961	1,654,951	3,440,659	222,612	8,900,646	652,240
Samsung Electronics Europe Holding (SEEH)	10,759,844	7,219,123	-	9,737	-	9,543
Samsung Semiconductor, Inc. (SSI)	10,393,536	4,704,219	6,476,342	25,357	11,065,791	90,508
Samsung Asia Private Ltd. (SAPL)	9,630,319	630,873	311,003	47,795	793,407	114,647
Samsung Austin Semiconductor (SAS)	7,288,664	607,896	1,039,689	276,618	2,141,866	584,880
Samsung India Electronics (SIEL)	7,077,288	3,464,271	1,875,006	68,846	4,435,830	237,059
Samsung Display Vietnam (SDV)	6,883,593	4,108,578	2,821,711	(134,723)	6,993,387	(5,704)
Shanghai Samsung Semiconductor (SSS)	6,854,183	5,080,677	6,861,036	74,816	13,083,415	146,967
Samsung Electronica da Amazonia (SEDA)	5,691,701	1,166,200	1,128,098	126,322	2,816,760	350,439
Thai Samsung Electronics (TSE)	3,012,441	470,724	834,100	46,361	1,739,850	64,975
Samsung Electronics HCMC CE Complex (SEHC)	2,413,446	890,929	1,373,288	69,809	2,638,510	204,871
Samsung Electronics (UK) (SEUK)	2,332,284	1,537,586	992,475	75,525	2,107,633	45,421
Samsung Electronics Hungarian (SEH)	2,155,038	430,284	724,045	44,401	1,463,398	89,082
Samsung Electronics Benelux (SEBN)	1,929,883	570,933	469,697	7,353	1,100,566	33,728
Samsung Electronics Europe Logistics (SELS)	1,925,621	1,422,921	2,549,887	81,196	5,695,126	351,318
Samsung International, Inc. (SII)	1,895,103	618,460	1,431,970	206,703	2,712,229	361,473
Samsung Display Dongguan (SDD)	1,800,740	335,103	986,129	56,570	1,576,835	84,383
Samsung Electronics GmbH (SEG)	1,799,324	1,685,671	1,218,621	10,896	2,724,199	52,585
SEMES	1,692,018	735,816	634,318	91,472	1,168,922	145,601

¹ Summary of condensed financial information is based on separate financial statements of each subsidiary.

² Consolidated financial data of an intermediate company that includes Harman International Industries, Inc. and its subsidiaries.

(2) 2019

Major subsidiaries ¹	As of June 30, 2019		June 30, 2019			
	Assets	Liabilities	For the three month period ended		For the six month period ended	
			Sales	Profit (loss) for the period	Sales	Profit (loss) for the period
Samsung Display	₩ 46,543,974	₩ 6,421,516	₩ 6,787,987	₩ 411,838	₩ 11,843,974	₩ (60,843)
Samsung Electronics America (SEA)	34,704,039	13,992,397	7,139,518	10,858	15,631,324	240,606
Harman and its subsidiaries ²	15,609,084	5,791,272	2,512,989	39,309	4,706,416	18,879
Samsung (CHINA) Investment (SCIC)	14,637,222	11,701,871	738,146	141,451	1,713,643	171,126
Samsung Electronics Vietnam THAINGUYEN (SEVT)	13,847,934	2,075,180	8,961,017	420,721	17,534,194	1,180,822
Samsung (China) Semiconductor (SCS)	12,370,070	2,678,742	1,678,890	237,251	2,652,856	371,038
Samsung Electronics Vietnam (SEV)	12,367,857	1,418,876	4,274,028	193,848	10,285,900	733,683
Samsung Electronics Europe Holding (SEEH)	10,682,847	7,662,042	-	11,461	-	13,947
Samsung Semiconductor, Inc. (SSI)	9,194,190	3,795,273	3,926,807	131,640	6,936,046	63,941
Samsung Asia Private Ltd. (SAPL)	9,137,262	579,618	396,345	852,850	776,355	894,837
Samsung Display Vietnam (SDV)	7,267,124	4,587,477	3,085,380	23,222	6,165,897	(34,787)
Samsung Electronica da Amazonia (SEDA)	7,058,719	1,594,907	1,888,222	166,169	3,574,984	368,954
Samsung India Electronics (SIEL)	7,042,872	3,588,241	3,690,668	137,977	6,552,597	267,764
Samsung Austin Semiconductor (SAS)	6,437,865	556,765	993,723	137,993	1,892,565	278,027
Shanghai Samsung Semiconductor (SSS)	5,880,616	4,446,885	6,721,028	41,934	11,883,527	88,741
Thai Samsung Electronics (TSE)	2,912,731	450,833	1,109,908	63,666	2,138,490	73,277
Samsung Electronics (UK) (SEUK)	2,644,358	1,877,903	1,096,582	64,286	2,195,247	56,831
Samsung Electronics HCMC CE Complex (SEHC)	2,305,587	1,035,533	1,213,778	165,217	2,480,482	292,544
Samsung Electronics GmbH (SEG)	2,258,269	2,199,561	1,215,743	32,562	2,640,739	(38,641)
Samsung Electronics Hungarian (SEH)	2,109,654	416,160	615,217	36,532	1,269,077	65,290
Samsung SemiConductor Xian (SSCX)	2,091,092	1,954,875	696,451	8,026	1,349,955	15,342
Samsung Electronics Europe Logistics (SELS)	2,027,213	1,891,221	2,683,601	(30,801)	5,987,057	139,713
Samsung Electronics Benelux (SEBN)	1,914,864	673,887	498,175	16,886	1,151,714	18,329
Samsung Suzhou LCD (SSL)	1,808,262	625,541	365,610	4,603	728,713	19,471
Samsung Display Dongguan (SDD)	1,795,077	444,552	1,093,553	86,299	1,809,321	96,374

¹ Summary of condensed financial information is based on separate financial statements of each subsidiary.

² Consolidated financial data of an intermediate company that includes Harman International Industries, Inc. and its subsidiaries.

(C) Changes in consolidation scope

Changes in consolidation scope during the six month period ended June 30, 2020 are as follows:

Change	Area	Subsidiary	Description
Included	America	TeleWorld Solutions. Inc. (TWS)	Acquisition
		TWS LATAM B, LLC	
		TWS LATAM S, LLC	
		SNB Technologies, Inc. Mexico, S.A. de C.V	
Excluded	Domestic	System LSI mutual benefit private equity trust	Establishment
	Asia (Excluding China)	Martin Professional Pte. Ltd.	Liquidation

2. Significant Accounting Policies

2.1 Basis of Presentation

The Company maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (“Korean IFRS”). The accompanying interim consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

The interim consolidated financial statements for the six month period ended June 30, 2020 have been prepared in accordance with *Korean IFRS 1034, Interim Financial Reporting*. These interim consolidated financial statements have been prepared in accordance with the Korean IFRS which is effective as of June 30, 2020.

(A) New and amended standards adopted by the Company

The Company applied the following amended and enacted standards for the first time for their annual reporting period commencing January 1, 2020:

Amendments to Korean IFRS 1103, Business Combination

To consider the integration of the required activities and assets as a business, the amended definition of a business requires an acquisition to include an input and a substantive process that together significantly contribute to the ability to create outputs and excludes economic benefits from the lower costs. An entity can apply a concentration test, ‘optional test’, where substantially all of the fair value of gross assets acquired is concentrated in a single asset (or group of similar assets), the assets acquired would not represent a business. This amendment does not have a significant impact on the consolidated financial statements.

(B) New and amended standards not yet adopted by the Company

There are no major new accounting standards or amendments issued that are effective for the annual reporting period commencing January 1, 2020.

2.2 Accounting Policies

Significant accounting policies and method of computation used in the preparation of the interim consolidated financial statements are consistent with those of the annual financial statements for the year ended December 31, 2019, except for the changes due to the application of amendments and enactments of standards described in Note 2.1 and as described below.

(A) Income tax expense

Income tax expense for the interim period is recognized based on management’s best estimate of the weighted average annual income tax rate expected for the full financial year. The estimated average annual effective income tax rate is applied to the pre-tax income of the interim period.

2.3 Convenience Translation into United States Dollar Amounts

The Company operates primarily in Korean won and its official accounting records are maintained in Korean won. The US dollar amounts provided in the consolidated financial statements represent supplementary information solely for the convenience of the reader. All Korean won amounts are expressed in US dollars at the rate of ₩ 1,206.7 to \$1, the average exchange rate for the six month period ended June 30, 2020. Such presentation is not in accordance with generally accepted accounting principles, and should not be construed as a representation that the Korean won amounts shown could be readily converted, realized or settled in US dollars at this or at any other rate.

2.4 Critical Accounting Estimates and Assumptions

In preparing the interim consolidated financial statements, the management of the Company makes judgements, estimates and assumptions on matters which affect the application of policies and reported amounts of assets, liabilities, income and expenses. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates, by definition, seldom equal the related actual results. Recent spread of COVID-19 may result in changes to the Company's assumptions and estimates but its potential financial impact cannot be reasonably estimated as of the reporting date.

Critical accounting estimates and assumptions made in the preparation of the interim consolidated financial statements are consistent with those applied in the preparation of the annual consolidated financial statements for the year ended December 31, 2019, except for the estimates used to determine the income tax expense.

3. Financial Instruments by Category

Categorizations of financial assets and liabilities as of June 30, 2020 and December 31, 2019 are as follows:

(1) As of June 30, 2020

<i>(In millions of Korean won)</i>	Financial assets measured at amortized cost	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through profit or loss	Other financial assets ¹	Total
Financial assets					
Cash and cash equivalents	₩ 36,109,613	₩ -	₩ -	₩ -	₩ 36,109,613
Short-term financial instruments	75,127,611	-	-	-	75,127,611
Trade receivables	32,989,762	-	-	-	32,989,762
Financial assets at amortized cost	1,224,565	-	-	-	1,224,565
Financial assets at fair value through other comprehensive income	-	9,511,923	-	-	9,511,923
Financial assets at fair value through profit or loss	-	-	1,710,902	-	1,710,902
Other	6,781,206	-	195,670	16,197	6,993,073
Total	₩ 152,232,757	₩ 9,511,923	₩ 1,906,572	₩ 16,197	₩ 163,667,449

¹Other financial assets include derivatives designated as hedging instruments which are not subject to categorizations.

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Financial liabilities measured at fair value through profit or loss	Other financial liabilities ¹	Total
Financial liabilities				
Trade payables	₩ 9,545,977	₩ -	₩ -	₩ 9,545,977
Short-term borrowings	2,760,708	-	10,015,640	12,776,348
Other payables	8,707,907	-	-	8,707,907
Current portion of long-term liabilities	35,986	-	752,885	788,871
Debentures	1,010,166	-	-	1,010,166
Long-term borrowings	-	-	2,109,366	2,109,366
Long-term other payables	1,623,661	2,401	-	1,626,062
Other	8,236,255	201,715	34,061	8,472,031
Total	₩ 31,920,660	₩ 204,116	₩ 12,911,952	₩ 45,036,728

¹Other financial liabilities include collateralized borrowings, lease liabilities and derivatives designated as hedging instruments which are not subject to categorizations.

(2) As of December 31, 2019

<i>(In millions of Korean won)</i>	Financial assets measured at fair value through other comprehensive income		Financial assets measured at fair value through profit or loss		Other financial assets¹		Total
	Financial assets measured at amortized cost						
Financial assets							
Cash and cash equivalents	₩ 26,885,999	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 26,885,999
Short-term financial instruments	76,252,052	-	-	-	-	-	76,252,052
Trade receivables	35,131,343	-	-	-	-	-	35,131,343
Financial assets at amortized cost	3,914,216	-	-	-	-	-	3,914,216
Financial assets at fair value through other comprehensive income	-	8,920,712	-	-	-	-	8,920,712
Financial assets at fair value through profit or loss	-	-	2,776,440	-	-	-	2,776,440
Other	9,656,415	-	181,682	26,444	-	-	9,864,541
Total	₩ 151,840,025	₩ 8,920,712	₩ 2,958,122	₩ 26,444	₩ -	₩ -	₩ 163,745,303

¹ Other financial assets include derivatives designated as hedging instruments which are not subject to categorizations.

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost		Financial liabilities measured at fair value through profit or loss		Other financial liabilities¹		Total
Financial liabilities							
Trade payables	₩ 8,718,222	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 8,718,222
Short-term borrowings	2,659,107	-	-	11,734,361	-	-	14,393,468
Other payables	11,034,253	-	-	-	-	-	11,034,253
Current portion of long-term liabilities	41,022	-	-	805,068	-	-	846,090
Debentures	975,298	-	-	-	-	-	975,298
Long-term borrowings	-	-	-	2,197,181	-	-	2,197,181
Long-term other payables	1,820,611	-	2,316	-	-	-	1,822,927
Others	8,158,935	-	204,671	10,540	-	-	8,374,146
Total	₩ 33,407,448	₩ 206,987	₩ 206,987	₩ 14,747,150	₩ -	₩ -	₩ 48,361,585

¹ Other financial liabilities include collateralized borrowings, lease liabilities, and derivatives designated as hedging instruments which are not subject to categorizations.

4. Financial Assets at Fair Value

(A) Details of financial assets at fair value as of June 30, 2020 and December 31, 2019 are as follows:

(1) Financial assets at fair value through other comprehensive income

<i>(In millions of Korean won)</i>	June 30, 2020		December 31, 2019	
Non-current portion				
Equity instruments	₩	9,511,923	₩	8,920,712

(2) Financial assets at fair value through profit or loss

<i>(In millions of Korean won)</i>	June 30, 2020		December 31, 2019	
Current portion				
Debt instruments	₩	582,641	₩	1,727,436
Non-current portion				
Equity instruments		734,301		704,155
Debt instruments		393,960		344,849
Subtotal		1,128,261		1,049,004
Total	₩	1,710,902	₩	2,776,440

(B) Details of listed equity securities of financial assets at fair value as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won, number of shares and percentage)</i>	June 30, 2020			December 31, 2019	
	Number of shares owned	Percentage of ownership¹ (%)	Acquisition cost	Carrying amount (Market value)	Carrying amount (Market value)
Samsung Heavy Industries	100,693,398	16.0	₩ 735,488	₩ 599,126	₩ 732,041
Hotel Shilla	2,004,717	5.1	13,957	142,335	182,028
iMarket Korea	647,320	1.8	324	5,638	6,732
Wonik Holdings	3,518,342	4.6	30,821	15,903	19,210
Wonik IPS	3,701,872	7.5	32,428	131,972	132,712
SFA	3,644,000	10.2	38,262	119,159	168,535
ASML	6,297,787	1.5	363,012	2,779,699	2,154,676
Wacom	8,398,400	5.0	62,013	51,486	39,765
BYD	52,264,808	1.9	528,665	636,668	412,935
Other			296,744	509,701	419,868
Total			₩ 2,101,714	₩ 4,991,687	₩ 4,268,502

¹ Ownership represents the Company's ownership of ordinary shares issued by each entity.

5. Inventories

Inventories as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020			December 31, 2019		
	Gross amount	Valuation allowance	Carrying amount	Gross amount	Valuation allowance	Carrying amount
Finished goods	₩ 7,699,780	₩ (416,065)	₩ 7,283,715	₩ 8,460,621	₩ (345,505)	₩ 8,115,116
Work in process	10,967,776	(855,333)	10,112,443	10,424,880	(538,246)	9,886,634
Raw materials and supplies	10,307,644	(717,865)	9,589,779	8,288,265	(541,155)	7,747,110
Materials in transit	2,659,592	-	2,659,592	1,017,604	-	1,017,604
Total	₩ 31,634,792	₩ (1,989,263)	₩ 29,645,529	₩ 28,191,370	₩ (1,424,906)	₩ 26,766,464

6. Investments in Associates and Joint Ventures

(A) Changes in investments in associates and joint ventures for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020	2019
Balance as of January 1	₩ 7,591,612	₩ 7,313,206
Acquisition	19,424	5,544
Disposal	-	(306)
Share of profit	146,866	142,173
Other ¹	(64,024)	(70,783)
Balance as of June 30	₩ 7,693,878	₩ 7,389,834

¹ Other consists of dividends, impairment, and reclassification.

(B) Major investments in associates and joint ventures as of June 30, 2020 are as follows:

(1) Investments in associates

Investee	Nature of relationship with associate	Percentage of ownership ¹ (%)	Principal business location	Fiscal period-end
Samsung Electro-Mechanics	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea	December
Samsung SDS	Provide IT services including computer programming, system integration and management and logistical services	22.6	Korea	December
Samsung Biologics	New business investment	31.5	Korea	December
Samsung SDI ²	Manufacture and supply electronic components including secondary cell batteries	19.6	Korea	December
Cheil Worldwide	Advertising agency	25.2	Korea	December

¹ Ownership represents the Company's ownership of ordinary shares issued by each entity.

² The Company's ownership of ordinary shares outstanding is 20.6%.

(2) Investments in joint ventures

Investee	Nature of relationship with joint venture	Percentage of ownership ¹ (%)	Principal business location	Fiscal period-end
Samsung Corning Advanced Glass	Manufacture and supply industrial glass devices	50.0	Korea	December

¹ Ownership represents the Company's ownership of ordinary shares issued by each entity.

(C) Details of investments in associates and joint ventures as of June 30, 2020 and December 31, 2019 are as follows:

(1) Investments in associates

(In millions of Korean won)

Investee	June 30, 2020	
	Acquisition cost	Net asset value of equity shares ¹
Samsung Electro-Mechanics	₩ 359,237	₩ 1,302,100
Samsung SDS	147,963	1,465,519
Samsung Biologics	443,193	1,399,262
Samsung SDI	1,242,605	2,476,009
Cheil Worldwide	506,162	265,083
Other	556,377	406,004
Total	₩ 3,255,537	₩ 7,313,977

¹ The Company's portion of net asset value of associates is based on the Company's percentage of ownership.

(In millions of Korean won)

Investee	December 31, 2019	
	Acquisition cost	Net asset value of equity shares ¹
Samsung Electro-Mechanics	₩ 359,237	₩ 1,237,753
Samsung SDS	147,963	1,478,586
Samsung Biologics	443,193	1,371,315
Samsung SDI	1,242,605	2,481,233
Cheil Worldwide	506,162	271,409
Other	550,404	373,606
Total	₩ 3,249,564	₩ 7,213,902

¹ The Company's portion of net asset value of associates is based on the Company's percentage of ownership.

(2) Investments in joint ventures

(In millions of Korean won)

Investee	Acquisition cost		June 30, 2020		Carrying amount
			Net asset value of equity shares ¹		
Samsung Corning Advanced Glass	₩	215,000	₩	175,024	₩ 175,020
Other		259,994		68,895	72,828
Total	₩	474,994	₩	243,919	₩ 247,848

¹ The Company's portion of net asset value of joint ventures is based on the Company's percentage of ownership.*(In millions of Korean won)*

Investee	Acquisition cost		December 31, 2019		Carrying amount
			Net asset value of equity shares ¹		
Samsung Corning Advanced Glass	₩	215,000	₩	173,746	₩ 173,742
Other		259,994		66,848	60,997
Total	₩	474,994	₩	240,594	₩ 234,739

¹ The Company's portion of net asset value of joint ventures is based on the Company's percentage of ownership.

(D) Details of the valuation of investments in associates and joint ventures using the equity method are as follows:

(1) For the six month period ended June 30, 2020

<i>(In millions of Korean won)</i>	Balance as of January 1		Share of profit (loss)		Share of other comprehensive income		Other ¹		Balance as of June 30	
Samsung Electro-Mechanics	₩	1,152,734	₩	50,038	₩	8,745	₩	(19,462)	₩	1,192,055
Samsung SDS		1,499,571		25,862		6,520		(37,888)		1,494,065
Samsung Biologics		1,377,043		26,712		366		-		1,404,121
Samsung SDI		2,233,516		7,044		(9,928)		(13,463)		2,217,169
Cheil Worldwide		570,215		16,485		972		(23,811)		563,861
Samsung Corning Advanced Glass		173,742		1,278		-		-		175,020
Other		584,791		19,447		(7,543)		50,892		647,587
Total	₩	7,591,612	₩	146,866	₩	(868)	₩	(43,732)	₩	7,693,878

¹ Other consists of acquisitions, disposals, dividends, impairment and reclassification.

(2) For the six month period ended June 30, 2019

<i>(In millions of Korean won)</i>	Balance as of January 1		Share of profit (loss)		Share of other comprehensive income		Other ¹		Balance as of June 30	
Samsung Electro-Mechanics	₩	1,126,043	₩	9,723	₩	15,971	₩	(17,693)	₩	1,134,044
Samsung SDS		1,376,321		74,476		9,243		(34,944)		1,425,096
Samsung Biologics		1,308,546		(17,216)		4,098		-		1,295,428
Samsung SDI		2,197,335		38,924		10,582		(13,463)		2,233,378
Cheil Worldwide		549,165		21,619		4,659		(22,359)		553,084
Samsung Corning Advanced Glass		173,499		1,243		-		-		174,742
Other		582,297		13,404		21,704		(43,343)		574,062
Total	₩	7,313,206	₩	142,173	₩	66,257	₩	(131,802)	₩	7,389,834

¹ Other consists of acquisitions, disposals, dividends, impairment, and reclassification.

(E) Summary of the condensed financial information of major associates and joint ventures

(1) Summary of condensed financial information of major associates and dividends received from associates as of June 30, 2020 and December 31, 2019, and for the six month period ended June 30, 2020 and 2019 are as follows:

(In millions of Korean won)	2020				
	Samsung Electro-Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
1. Condensed financial information					
Condensed statements of financial position :					
Current assets	₩ 3,936,107	₩ 6,375,255	₩ 1,516,689	₩ 5,614,982	₩ 1,601,122
Non-current assets	5,252,288	2,622,769	4,516,185	14,924,980	473,350
Current liabilities	2,273,159	1,755,270	833,484	4,754,460	948,440
Non-current liabilities	1,355,433	582,301	756,192	3,133,378	193,174
Non-controlling interests	155,277	177,345	-	353,139	8,305
Condensed statements of comprehensive income:					
Revenue	4,036,677	5,002,685	514,888	4,956,144	1,324,015
Profit (loss) from continuing operations ¹	165,393	114,354	88,672	33,790	57,495
Profit (loss) from discontinued operation ¹	5,833	-	-	-	-
Other comprehensive income ¹	31,497	8,926	73	7,202	1,441
Total comprehensive income ¹	202,723	123,280	88,745	40,992	58,936
2. Dividends from associates					
Dividends	₩ 19,462	₩ 41,933	₩ -	₩ 13,463	₩ 23,811

¹ Profit (loss) attributable to owners of the investee

(In millions of Korean won)	2019				
	Samsung Electro-Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
1. Condensed financial information					
Condensed statements of financial position:					
Current assets	₩ 3,507,525	₩ 6,383,847	₩ 1,356,262	₩ 5,181,415	₩ 1,787,299
Non-current assets	5,166,724	2,637,389	4,555,365	14,670,682	504,347
Current liabilities	1,850,405	1,698,187	690,505	3,741,523	1,115,652
Non-current liabilities	1,393,746	597,891	866,668	3,450,229	219,178
Non-controlling interests	145,050	179,362	-	335,408	10,197
Condensed statements of comprehensive income:					
Revenue	3,979,272	5,278,539	203,447	4,708,570	1,675,319
Profit (loss) from continuing operations ¹	257,038	329,590	(53,242)	198,733	66,879
Profit (loss) from discontinued operation ¹	176,373	-	-	-	-
Other comprehensive income ¹	69,205	41,280	(477)	139,429	10,445
Total comprehensive income ¹	502,616	370,870	(53,719)	338,162	77,324
2. Dividends from associates					
Dividends	₩ 17,693	₩ 34,944	₩ -	₩ 13,463	₩ 22,359

¹ Profit (loss) attributable to owners of the investee.

- (2) Summary of condensed financial information of major joint ventures and dividends received from joint ventures as of June 30, 2020 and December 31, 2019, and for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	Samsung Corning Advanced Glass			
	2020		2019	
1. Condensed financial information				
Condensed statements of financial position:				
Current assets	₩	165,094	₩	164,870
- Cash and cash equivalent		18,446		35,553
Non-current assets		222,062		225,334
Current liabilities		34,322		40,567
- Financial liabilities ¹		16,682		21,108
Non-current liabilities		2,786		2,146
Condensed statements of comprehensive income²:				
Revenue		110,868		123,099
Depreciation and amortization		510		309
Interest income		411		272
Income tax expense		405		352
Profit from continuing operations		2,555		2,487
Other comprehensive income		-		-
Total comprehensive income		2,555		2,487
2. Dividends from joint ventures				
Dividends	₩	-	₩	-

¹ Trade payables, other payables and provisions are excluded.

² Amounts for the six month period ended June 30, 2020 and 2019.

- (3) Profit (loss) attributable to owners of the parent company from associates and joint ventures which are not individually material for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
	Associates	Joint ventures	Associates	Joint ventures
Profit from continuing operations	₩ 18,950	₩ 497	₩ 12,857	₩ 547
Other comprehensive income	(10,390)	2,847	16,372	5,332
Total comprehensive income	₩ 8,560	₩ 3,344	₩ 29,228	₩ 5,878

- (F) Details of marketable investments in associates as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won and number of shares)</i>	June 30, 2020		December 31, 2019	
	Number of shares held	Market value	Market value	
Samsung Electro-Mechanics	₩ 17,693,084	₩ 2,282,408	₩	2,211,636
Samsung SDS	17,472,110	2,944,051		3,398,325
Samsung Biologics	20,836,832	16,148,545		9,022,348
Samsung SDI	13,462,673	4,893,682		3,177,191
Cheil Worldwide	29,038,075	476,224		698,366

- (G) Other matters

On July 12, 2018, the Korea Securities and Futures Commission determined an initial measure following an investigation relating to Samsung Biologics Co., Ltd., an associate of the Company, and its accounting for its investment in Samsung Bioepis Co., Ltd, a joint venture between Biogen Therapeutics Inc. and Samsung Biologics Co., Ltd. This measure included a recommendation to dismiss the director in charge, prosecution charges, and external auditor designation by the regulator, on the basis that the Joint Venture Agreement was not disclosed in the notes to the financial statements. On November 14, 2018, the Korea Securities and Futures Commission determined a second measure which included a penalty of ₩ 8,000 million, a recommendation to dismiss the CEO, a requirement to restate its financial statements, and further prosecution charges.

Consequently, Samsung Biologics Co., Ltd. filed a suit for cancellation of the aforementioned measures to the Seoul Administrative Court to suspend the execution of these measures, and the respective court has pronounced a decision to suspend these measures until the final rulings on January 22, 2019 and February 19, 2019, relating to the second and first measures, respectively. The Korea Securities and Futures Commission immediately appealed against the decision to suspend execution but on May 13, 2019 and May 24, 2019, relating to the second and first measures, respectively, the Court dismissed the Korea Securities and Futures Commission's appeal. The Korea Securities and Futures Commission has re-appealed on May 23, 2019 and June 10, 2019, relating to the second and first measures, respectively. On September 6, 2019 and October 11, 2019, the Court dismissed the Korea Securities and Futures Commission's re-appeal relating to the second and first measures, respectively.

Although the future outcome of the administrative litigation cannot be estimated, should Samsung Biologics Co., Ltd. be required to restate its financial statements to amend its historical accounting treatment relating to its investment in Samsung Bioepis Co., Ltd., the Company's share of profit or loss relating to its equity method investment, the amount of investment in associates, and retained earnings, for the years ended December 31, 2015 and onwards, and the profit on disposal of investment for the year ended December 31, 2016, may be impacted. Given the timing of completion and the final result of the administrative litigation between Samsung Biologics Co., Ltd. and the Korea Securities and Futures Commission is uncertain and cannot currently be estimated, it is not possible for the Company to recognize the effects of these proceedings in the current period consolidated financial statements.

7. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
Balance as of January 1	₩	119,825,474	₩	115,416,724
Acquisition and capital expenditures		17,457,097		11,221,619
Depreciation		(13,199,555)		(13,481,068)
Disposals, scrap, and impairment		(267,125)		(476,482)
Other ¹		478,687		3,943,396
Balance as of June 30	₩	124,294,578	₩	116,624,189

¹ Other includes the cumulative effect of changes in accounting principles, changes in foreign currency exchange rates, offset of government grants, and acquisition from business combinations.

(B) Details of depreciation of property, plant and equipment for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
Cost of sales	₩	11,570,719	₩	12,026,558
Selling and administrative expenses, and etc.		1,628,836		1,454,510
Total	₩	13,199,555	₩	13,481,068

(C) Right-of-use assets as of June 30, 2020 amounts to ₩ 3,170,501 million (December 31, 2019: ₩ 3,311,919 million). During the six month period ended June 30, 2020 and 2019, newly recognized right-of-use assets amounted to ₩ 379,297 million and ₩ 510,193 million, respectively, with relevant depreciation of ₩ 403,627 million and ₩ 365,511 million, respectively.

8. Intangible Assets

(A) Changes in intangible assets for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
Balance as of January 1	₩	20,703,504	₩	14,891,598
External acquisitions		748,823		301,570
Internally generated (development costs)		-		260,043
Amortization		(1,624,379)		(505,176)
Disposals, scrap, and impairment		(700,543)		(24,473)
Other ¹		480,849		619,463
Balance as of June 30	₩	19,608,254	₩	15,543,025

¹ Other includes the cumulative effect of changes in foreign currency exchange rates and acquisition from business combinations.

(B) Details of amortization of intangible assets for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
Cost of sales	₩	1,155,778	₩	164,839
Selling and administrative expenses and other		468,601		340,337
Total	₩	1,624,379	₩	505,176

9. Borrowings

Details of the carrying amounts of borrowings as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>	Financial institutions	Annual interest rates		June 30, 2020	December 31, 2019
		(%)	as of June 30, 2020		
Short-term borrowings					
Collateralized borrowings ¹	Woori Bank and others	0.0~18.3		₩ 10,015,640	₩ 11,734,361
Non-collateralized borrowings	Citibank and others	0.0~7.8		2,760,708	2,659,107
Total				₩ 12,776,348	₩ 14,393,468
Current portion of long-term borrowings					
Bank borrowings	KEB Hana Bank and others	2.6~4.5		₩ 30,115	₩ 35,376
Lease liabilities ²	CSSD and others	3.8		752,885	805,068
Total				₩ 783,000	₩ 840,444
Long-term borrowings					
Lease liabilities ²	CSSD and others	3.8		2,109,366	2,197,181
Total				₩ 2,109,366	₩ 2,197,181

¹ Collateralized borrowings are secured by trade receivables.

² Interest expenses arising from the lease liabilities during the six month ended June 30, 2020 and 2019 amounted to ₩ 56,477 million and ₩ 49,456 million, respectively, which were determined using the weighted average incremental borrowing rate. The right-of-use assets are pledged as collateral to the lessor in the event of default.

10. Debentures

Details of the carrying amounts of debentures as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>	Issue date	Due date	Annual interest rates		June 30, 2020	December 31, 2019
			(%)	as of June 30, 2020		
US dollar denominated straight bonds ¹	1997.10.2	2027.10.1	7.7		₩ 48,028 (USD 40 million)	₩ 46,312 (USD 40 million)
US dollar denominated debenture bonds ²	2015.5.6	2025.5.15	4.2		480,280 (USD 400 million)	463,120 (USD 400 million)
EURO denominated debenture bonds ³	2015.5.20	2022.5.27	2.0		472,568 (EUR 350 million)	454,100 (EUR 350 million)
Less: Discounts					(1,063)	(1,146)
Add: Premium					16,224	18,558
Less: Current portion					(5,871)	(5,646)
Total					₩ 1,010,166	₩ 975,298

¹ US dollar denominated straight bonds are repaid annually for twenty years after a ten-year grace period from the date of issuance. Interest is paid semi-annually.

² Harman International Industries issued US dollar denominated debenture bonds. Repayment of these debentures is due on the date of maturity and interest is paid semi-annually.

³ Harman Finance International SCA issued Euro denominated debenture bonds. Repayment of these debentures is due on the date of maturity and interest is paid annually.

11. Net Defined Benefit Liabilities (Assets)

(A) Details of net defined benefit liabilities (assets) recognized in the statements of financial position as of June 30, 2020 and

December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020		December 31, 2019	
Present value of funded defined benefit obligations	₩	11,282,712	₩	10,864,675
Present value of unfunded defined benefit obligations		320,625		283,394
Subtotal		11,603,337		11,148,069
Fair value of plan assets		(11,256,190)		(11,267,121)
Total	₩	347,147	₩	(119,052)

- (B) The components of defined benefit costs recognized in profit or loss for the six month period ended June 30, 2020 and 2019 relating to defined benefit plans are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
Current service cost	₩	570,235	₩	461,358
Net interest income		(4,694)		(1,384)
Past service cost		488		845
Other		(6,608)		692
Total	₩	559,421	₩	461,511

- (C) The expenses related to defined benefit plans recognized in the statements of profit or loss for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
Cost of sales	₩	251,493	₩	208,532
Selling and administrative expenses and other		307,928		252,979
Total	₩	559,421	₩	461,511

12. Provisions

Changes in the provisions for the six month period ended June 30, 2020 are as follows:

<i>(In millions of Korean won)</i>	Warranty (A)	Royalty expenses (B)	Long-term incentives (C)	Other (D, E)	Total
Balance as of January 1	₩ 1,791,007	₩ 1,053,448	₩ 793,270	₩ 1,042,002	₩ 4,679,727
Charged to profit or loss	531,689	232,482	320,677	1,122,644	2,207,492
Payment	(629,933)	(67,119)	(157,151)	(465,740)	(1,319,943)
Other ¹	15,345	28,063	5,078	(5,352)	43,134
Balance as of June 30	₩ 1,708,108	₩ 1,246,874	₩ 961,874	₩ 1,693,554	₩ 5,610,410

¹ Other includes effects of changes in foreign currency exchange rates.

- (A) The Company accrues warranty reserves for estimated costs of future service, repairs and recalls based on historical experience and terms of warranty programs.
- (B) The Company recognizes provisions for the estimated royalty expenses that are under negotiation with counterparties. The timing and amount of payment depend on the settlement of the negotiation.
- (C) The Company has a long-term incentive plan for its executives based on a three-year management performance criteria and recognizes a provision for the estimated incentive cost for the accrued period.
- (D) The Company records provisions for the estimated expenses occurring from discontinuing production, sale of products and other activities.
- (E) The Company makes provisions for the carrying amounts of emission rights held by the Company and the emission in excess of the emission rights for the applicable years. Details of emission rights and liabilities as of June 30, 2020 are as follows:

- (1) Allocated amount of emission permits and the estimated amount of emission as of June 30, 2020 are as follows:

<i>(In ten thousand metric tons)</i>	June 30, 2020
Allocated emission permits	1,572
Estimated volume of emission	1,857

- (2) Changes in the emission permits rights for the six month period ended June 30, 2020 are as follows:

<i>(In millions of Korean won)</i>	2020
Balance as of January 1	₩ 38,787
Acquisition	66
Balance as of June 30	₩ 38,853

- (3) Changes in emissions liabilities for the six month period ended June 30, 2020 are as follows:

<i>(In millions of Korean won)</i>	2020
Balance as of January 1	₩ 18,414
Charged to the statement of profit or loss	57,579
Submission	-
Balance as of June 30	₩ 75,993

13. Commitments and Contingencies

(A) Litigation

The Company is involved in various claims, disputes, and investigations conducted by regulatory bodies, which arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, as of the reporting date, the Company believes the outcome will not have a material impact on the financial position of the Company.

14. Contract Liabilities

The Company has recognized contract liabilities related to contracts with customers as follows:

<i>(In millions of Korean won)</i>	June 30, 2020		December 31, 2019	
Contract liabilities ¹	₩	7,718,295	₩	9,240,401

¹ Contract liabilities include advances received, accrued expenses, other current liabilities and others.

15. Share Capital

As of June 30, 2020, the Company's total number of authorized shares is 25,000,000,000 shares (₩ 100 per share). The Company has issued 5,969,782,550 shares of ordinary shares and 822,886,700 shares of preference shares as of June 30, 2020, excluding retired shares. Due to the retirement of shares, the total par value of the shares issued is ₩ 679,267 million (ordinary shares of ₩ 596,978 million and preference shares of ₩ 82,289 million), which does not agree with paid-in capital of ₩ 897,514 million.

16. Retained Earnings

(A) Retained earnings as of June 30, 2020 and December 31, 2019 consist of the following:

<i>(In millions of Korean won)</i>	June 30, 2020		December 31, 2019	
Discretionary reserve, etc.	₩	174,165,282	₩	168,322,868
Unappropriated		85,999,771		86,260,026
Total	₩	260,165,053	₩	254,582,894

(B) Details of interim dividends for the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won and number of shares)</i>		2020		2019	
1 st Quarter	Number of shares eligible for dividends	Ordinary shares	5,969,782,550	5,969,782,550	
		Preference shares	822,886,700	822,886,700	
	Dividend rate (based on par value)		354%	354%	
	Dividend amount	Ordinary shares	₩ 2,113,303	₩ 2,113,303	
Preference shares		291,302	291,302		
	Total	₩ 2,404,605	₩ 2,404,605		
2 nd Quarter	Number of shares eligible for dividends	Ordinary shares	5,969,782,550	5,969,782,550	
		Preference shares	822,886,700	822,886,700	
	Dividend rate (based on par value)		354%	354%	
	Dividend amount	Ordinary shares	₩ 2,113,303	₩ 2,113,303	
Preference shares		291,302	291,302		
	Total	₩ 2,404,605	₩ 2,404,605		

17. Other Components of Equity

Other components of equity as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020		December 31, 2019	
Gain on valuation of financial assets at fair value through other comprehensive income	₩	2,964,669	₩	2,573,530
Share of other comprehensive income (loss) of associates and joint ventures		(13,851)		(12,735)
Foreign currency translation		(4,721,493)		(5,645,769)
Remeasurement of net defined benefit liabilities (assets)		(1,981,042)		(1,944,284)
Other		30,622		60,429
Total	₩	(3,721,095)	₩	(4,968,829)

18. Expenses by Nature

Expenses by nature for the three and six month period ended June 30, 2020 and 2019 consist of the following:

<i>(In millions of Korean won)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
Changes in finished goods and work in process	₩ (40,147)	₩ 605,592	₩ 539,703	₩ (1,220,776)
Raw materials used and merchandise purchased	16,090,402	34,501,494	19,604,648	38,934,187
Wages and salaries	6,069,128	12,156,419	6,002,649	11,928,628
Post-employment benefit	309,438	614,901	273,719	553,953
Depreciation	6,608,388	13,199,555	6,640,252	13,481,068
Amortization	809,941	1,624,379	250,448	505,176
Welfare	1,170,925	2,312,483	1,184,796	2,346,648
Utilities	1,105,055	2,259,758	1,067,048	2,169,079
Outsourcing	1,346,967	2,696,137	1,240,431	2,427,118
Advertising	634,452	1,594,080	1,113,121	2,078,644
Sales promotion expenses	1,085,484	2,697,575	1,702,414	3,435,379
Other	9,629,817	19,435,310	9,910,810	19,043,199
Total¹	₩ 44,819,850	₩ 93,697,683	₩ 49,530,039	₩ 95,682,303

¹ Equal to the sum of cost of sales and selling and administrative expenses in the interim consolidated statements of profit or loss.

19. Selling and Administrative Expenses

Selling and administrative expenses for the three and six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
1) Selling and administrative expenses				
Wages and salaries	₩ 1,721,686	₩ 3,355,339	₩ 1,603,967	₩ 3,180,098
Post-employment benefit	65,197	122,521	61,497	135,210
Commissions and service charges	1,430,844	2,811,119	1,277,223	2,601,238
Depreciation	406,159	815,723	390,401	774,385
Amortization	148,681	293,392	109,274	213,751
Advertising	634,452	1,594,080	1,113,121	2,078,644
Sales promotion expenses	1,085,484	2,697,575	1,702,414	3,435,379
Transportation	503,393	955,634	528,536	1,032,771
Warranty	634,611	1,367,139	685,948	1,387,826
Other	1,065,503	2,394,633	1,160,556	2,296,865
2) Research and development expenses				
Total expenses	5,217,642	10,577,636	5,084,497	10,115,043
Capitalized expenses	-	-	(132,079)	(260,043)
Total	₩ 12,913,652	₩ 26,984,791	₩ 13,585,355	₩ 26,991,167

20. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the three and six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
Non-operating income				
Dividend income	₩ 45,609	₩ 81,638	₩ 49,932	₩ 84,643
Rental income	36,045	72,330	36,219	75,389
Gain on disposal of investments	10,252	34,257	13,693	25,056
Gain on disposal of property, plant and equipment	26,394	61,779	78,132	167,811
Other	171,979	355,781	182,183	329,042
Total	₩ 290,279	₩ 605,785	₩ 360,159	₩ 681,941

<i>(In millions of Korean won)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
Non-operating expenses				
Loss on disposal of property, plant and equipment	₩ 39,871	₩ 49,037	₩ 33,799	₩ 77,747
Donations	83,252	160,696	154,580	200,186
Other	937,716	1,215,161	124,504	292,081
Total	₩ 1,060,839	₩ 1,424,894	₩ 312,883	₩ 570,014

21. Financial Income and Expenses

(A) Details of financial income and expenses for the three and six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
Financial income				
Interest income:	₩ 463,098	₩ 1,049,931	₩ 672,300	₩ 1,334,310
- Financial assets measured at amortized cost	462,986	1,049,736	672,174	1,334,071
- Financial assets measured at fair value through profit or loss	112	195	126	239
Foreign exchange differences	1,125,062	3,887,564	2,338,480	3,377,842
Gains from derivatives	181,423	623,466	140,803	355,967
Total	₩ 1,769,583	₩ 5,560,961	₩ 3,151,583	₩ 5,068,119

<i>(In millions of Korean won)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
Financial expenses				
Interest expenses:	₩ 100,356	₩ 240,529	₩ 180,619	₩ 354,680
- Financial liabilities measured at amortized cost	33,982	81,102	66,542	137,915
- Other financial liabilities	66,374	159,427	114,077	216,765
Foreign exchange differences	1,207,404	4,276,575	2,331,500	3,338,544
Losses from derivatives	154,080	438,702	168,933	367,000
Total	₩ 1,461,840	₩ 4,955,806	₩2,681,052	₩4,060,224

(B) The Company recognizes foreign exchange gains and losses arising from foreign currency transactions and translation as financial income and expenses.

22. Income Tax Expense

Income tax expense is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The average annual tax rate expected as of June 30, 2020 to be effective for the year ended December 31, 2020 is 28.1%.

23. Earnings per Share

(A) Basic earnings per share

Basic earnings per share for the three and six month period ended June 30, 2020 and 2019 are calculated as follows:

(1) Ordinary shares

<i>(In millions of Korean won, thousands of number of shares)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
Profit for the period attributable to owners of the parent company	₩ 5,488,964	₩ 10,378,563	₩ 5,064,530	₩ 10,172,020
Profit for the period available for ordinary shares	4,824,012	9,121,269	4,450,996	8,939,748
Weighted-average number of ordinary shares outstanding	5,969,783	5,969,783	5,969,783	5,969,783
Basic earnings per ordinary share (in Korean won)	₩ 808	₩ 1,528	₩ 746	₩ 1,497

(2) Preference shares

<i>(In millions of Korean won, thousands of number of shares)</i>	June 30, 2020		June 30, 2019	
	3 Month	6 Month	3 Month	6 Month
Profit for the period attributable to owners of the parent company	₩ 5,488,964	₩ 10,378,563	₩ 5,064,530	₩ 10,172,020
Profit for the period available for preference shares	664,952	1,257,294	613,534	1,232,273
Weighted-average number of preference shares outstanding	822,887	822,887	822,887	822,887
Basic earnings per preference share (in Korean won)	₩ 808	₩ 1,528	₩ 746	₩ 1,497

(B) Diluted earnings per share

The Company does not have dilutive potential ordinary shares and as a result, basic earnings per share and diluted earnings per share are the same for the three and six month period ended June 30, 2020 and 2019.

24. Cash Generated from Operating Activities

Adjustments and changes in assets and liabilities arising from operating activities for the six month period ended June 30, 2020 and 2019 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2020	2019
Adjustments:		
Income tax expense	₩ 4,086,540	₩ 3,868,181
Financial income	(2,121,411)	(2,267,491)
Financial expenses	1,452,492	1,357,477
Post-employment benefits	614,901	553,953
Depreciation	13,199,555	13,481,068
Amortization	1,624,379	505,176
Bad debt expenses (reversal)	44,885	42,026
Dividend income	(81,638)	(84,643)
Share of profit of associates and joint ventures	(146,866)	(142,173)
Gain on disposal of property, plant and equipment	(61,779)	(167,811)
Loss on disposal of property, plant and equipment	49,037	77,747
Loss on valuation of inventories	1,100,034	788,880
Gain on disposal of investments	(34,257)	(25,056)
Others	25,262	9,635
Total	₩ 19,751,134	₩ 17,996,969

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2020	2019
Changes in assets and liabilities :		
Decrease (increase) in trade receivables	₩ 2,303,513	₩ 747,983
Decrease (increase) in other receivables	543,346	(104,210)
Decrease (increase) in advance payments	(16,383)	(152,627)
Decrease (increase) in prepaid expenses	(101,621)	386,741
Decrease (increase) in inventories	(3,879,017)	(2,332,910)
Increase (decrease) in trade payables	417,181	(1,175,012)
Increase (decrease) in other payables	(324,107)	(1,321,087)
Increase (decrease) in advances received	(127,585)	60,562
Increase (decrease) in withholdings	(72,804)	(264,446)
Increase (decrease) in accrued expenses	(1,518,453)	(4,857,283)
Increase (decrease) in provisions	887,549	1,934,686
Payment of post-employment benefits	(339,398)	(177,055)
Others	(234,240)	(512,853)
Total	₩ (2,462,019)	₩ (7,767,511)

Repayment of the principal (financial activities) for the six month period ended June 30, 2020 and 2019, were ₩ 418,931 million and ₩ 316,286 million, respectively, while payment of interest expenses for lease liabilities (operating activities) amount to ₩ 56,477 million and ₩ 49,456 million, respectively.

25. Financial Risk Management

The Company's financial risk management focuses on minimizing market risk, credit risk, and liquidity risk arising from operating activities. To mitigate these risks, the Company implements and operates a financial risk policy and program that closely monitors and manages such risks. In addition, the Company uses derivatives to hedge certain risk exposure.

The finance team mainly carries out the Company's financial risk management. With the cooperation of the Company's divisions, domestic and foreign subsidiaries, the finance team periodically measures, evaluates and hedges financial risk and also establishes and implements the global financial risk management policy.

The Company also operates local finance centers in accordance with global financial risk management across major regions, including the United States, United Kingdom, Singapore, China, Brazil and Russia.

The Company's financial assets that are under financial risk management are comprised of cash and cash equivalents, short-term financial instruments, financial assets at amortized cost, financial assets at fair value through other comprehensive income, financial assets at fair value through profit or loss, trade receivables and other receivables. The Company's financial liabilities under financial risk management are comprised of trade payables, borrowings, debentures, and other liabilities.

(A) Market risk

(1) Foreign exchange risk

Revenues and expenses arise from foreign currency transactions and exchange positions, and the most widely used currencies are the US dollar, EU's Euro, and Indian Rupee.

To minimize foreign exchange risk arising from operating activities, the Company's foreign exchange management policy requires normal business transactions to be in local currency or for the cash-in currency to be matched up with the cash-out currency. In addition, the Company makes use of derivatives to minimize the uncertainty of cash flows and fluctuation of profit or loss occurring from foreign exchange risk. The Company's foreign exchange risk management policy also defines foreign exchange risk, measuring period, controlling responsibilities, management procedures, hedging period and hedge ratio.

The Company limits all speculative foreign exchange transactions and operates a system to manage receivables and payables denominated in foreign currency. It evaluates, manages and reports foreign currency exposures to receivables and payables.

(2) Interest rate risk

Risk of changes in interest rates for floating interest rate financial instruments is defined as the risk that the fair value of components of the statement of financial position, and future cash flows of interest income (expenses) of a financial instrument, will fluctuate because of changes in market interest rates. The Company's position with regard to interest rate risk exposure is mainly driven by its floating interest rate debt obligations and interest-bearing deposits. The Company implemented policies and operates to minimize uncertainty arising from changes in interest rates and financial expenses.

In order to minimize interest rate risk, the Company maintains minimum external borrowings by facilitating cash pooling systems on a regional and global basis. The Company manages exposed interest rate risk via periodic monitoring and handling risk factors on a timely basis.

(3) Price risk

The Company's investment portfolio consists of direct and indirect investments in equity instruments classified as financial assets at fair value through other comprehensive income and financial assets at fair value through profit or loss, which is in line with the Company's strategy.

As of June 30, 2020 and 2019, price fluctuation of marketable equity securities by 1% would result in changes in other comprehensive income (before income tax) of ₩ 47,701 million and ₩ 34,792 million, respectively, and changes in profit before tax of ₩ 2,216 million and ₩ 289 million, respectively.

(B) Credit risk

Credit risk arises during the normal course of transactions and investing activities where clients or other parties fail to discharge an obligation. The Company monitors and sets the client's and counterparty's credit limit on a periodic basis based on the client's and counterparty's financial conditions, default history and other important factors. Adequate insurance coverage is maintained for trade receivables related to trading partners situated in higher risk countries.

Credit risk can arise from transactions with financial institutions which include financial instrument transactions such as cash and cash equivalents, deposits, and derivative instruments. To minimize such risk, the Company transacts only with banks which have a strong international credit rating (S&P A and above), and all new transactions with financial institutions with no prior transaction history are approved, managed and monitored by the Company's finance team and the local finance center. The Company generally enters into a financial agreement with no restrictions, such as debt ratio covenants, provision of collateral and/or repayment of loans/ borrowings. The Company requires separate approvals for contracts with restrictions.

As of June 30, 2020 and December 31, 2019, the Company estimates that its maximum exposure to credit risk is the carrying amount of its financial assets, net of impairment losses.

(C) Liquidity risk

Due to large investments made by the Company, maintaining adequate levels of liquidity risk is critical. The Company strives to achieve this goal by periodically forecasting its capital balance, estimating required cash levels, and managing income and expenses.

The Company manages its liquidity risk by periodically forecasting projected cash flows. If abnormal signs are identified, the Company works with the local finance center and provides liquidity support by utilizing a globally integrated finance structure, such as Cash Pooling. In addition, the Company maintains a liquidity management process which provides additional financial support from the local finance center and the Company. The Cash Pooling program allows the sharing of surplus funds among entities and contributes to minimizing liquidity risk and strengthening the Company's competitive position by reducing capital operation expenses and financial expenses.

In addition, the Company mitigates liquidity risk by contracting with financial institutions with respect to bank overdrafts and foreign trade finance, and by providing payment guarantees to subsidiaries to secure the required credit limit. For large scale facility investments, liquidity risk is minimized by utilizing internal reserves and long term borrowings according to the capital injection schedule.

(D) Capital risk management

The purpose of capital management is to maintain a sound capital structure. The Company monitors capital on the basis of credit ratings and debt ratio. Debt ratio is calculated by dividing total liabilities by total equity in the financial statements.

The Company's capital risk management policy has not changed since the prior reporting periods. The Company has maintained an AA- and Aa3 credit rating from S&P and Moody's, respectively.

The total liabilities to equity ratios as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020	December 31, 2019
Total liabilities	₩ 88,151,682	₩ 89,684,076
Total equity	269,807,817	262,880,421
Debt ratio	32.7%	34.1%

(E) Fair value estimation

(1) Carrying amounts and fair values of financial instruments by category as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2020		December 31, 2019	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	₩ 36,109,613	(*)	₩ 26,885,999	(*)
Short-term financial instruments	75,127,611	(*)	76,252,052	(*)
Short-term financial assets at amortized cost	1,224,565	(*)	3,914,216	(*)
Short-term financial assets at fair value through profit or loss	582,641	582,641	1,727,436	1,727,436
Trade receivables	32,989,762	(*)	35,131,343	(*)
Financial assets at fair value through other comprehensive income	9,511,923	9,511,923	8,920,712	8,920,712
Financial assets at fair value through profit or loss	1,128,261	1,128,261	1,049,004	1,049,004
Other ²	6,993,073	211,867	9,864,541	208,126
Total financial assets	₩ 163,667,449		₩ 163,745,303	
Financial liabilities				
Trade payables	₩ 9,545,977	(*)	₩ 8,718,222	(*)
Short-term borrowings	12,776,348	(*)	14,393,468	(*)
Other payables	8,707,907	(*)	11,034,253	(*)
Current portion of long-term liabilities	788,871	(*) ⁽³⁾	846,090	(*) ⁽³⁾
Debentures	1,010,166	1,055,324	975,298	1,013,245
Long-term borrowings	2,109,366	(*) ⁽³⁾	2,197,181	(*) ⁽³⁾
Long-term other payables ²	1,626,062	2,401	1,822,927	2,316
Other ²	8,472,031	235,776	8,374,146	215,211
Total financial liabilities	₩ 45,036,728		₩ 48,361,585	

¹ Assets and liabilities whose carrying amount is a reasonable approximation of fair value are excluded from the fair value disclosures.

² Assets measured at the cost of ₩ 6,781,206 million (December 31, 2019: ₩ 9,656,415 million) and liabilities measured at the cost of ₩ 9,859,916 million (December 31, 2019: ₩9,979,546 million) are excluded as the carrying amount is a reasonable approximation of fair value.

³ Lease liabilities, classified under the current portion of long-term liabilities and long-term borrowings, are excluded from the fair value disclosures in accordance with *Korean IFRS 1107*.

(2) Fair value hierarchy classifications of the financial instruments that are measured or disclosed at fair value as of June 30, 2020 and December 31, 2019 are as follows:

		June 30, 2020			
<i>(In millions of Korean won)</i>		Level 1	Level 2	Level 3	Total balance
1) Assets					
Financial assets at fair value through other comprehensive income	₩	4,770,125	₩ -	₩ 4,741,798	₩ 9,511,923
Financial assets at fair value through profit or loss		221,562	59,966	1,429,374	1,710,902
Other		-	211,867	-	211,867
2) Liabilities					
Debentures		-	1,055,324	-	1,055,324
Long-term other payables		-	-	2,401	2,401
Other		-	235,776	-	235,776

		December 31, 2019			
<i>(In millions of Korean won)</i>		Level 1	Level 2	Level 3	Total balance
1) Assets					
Financial assets at fair value through other comprehensive income	₩	4,105,456	₩ -	₩ 4,815,256	₩ 8,920,712
Financial assets at fair value through profit or loss		163,046	20,966	2,592,428	2,776,440
Other		-	208,126	-	208,126
2) Liabilities					
Debentures		-	1,013,245	-	1,013,245
Long-term other payables		-	-	2,316	2,316
Other		-	215,211	-	215,211

The levels of the fair value hierarchy and its application to financial assets and liabilities are described below.

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly
- Level 3: Inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs)

The fair value of financial instruments traded in active markets is based on quoted market prices at the statement of financial position date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Company is the current bid price. These instruments are included in Level 1. The instruments included in Level 1 are listed equity investments, most of which are classified as financial assets at fair value through other comprehensive income.

The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity-specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs are not based on observable market data, the instrument is included in Level 3.

The Company performs the fair value measurements required for financial reporting purposes, including Level 3 fair values and discusses valuation processes and results at least once every quarter in line with the Company's quarterly reporting dates. The Company's policy is to recognize transfers between levels at the end of the reporting period, if corresponding events or changes in circumstances have occurred.

Specific valuation techniques used to value financial instruments include:

- Quoted market prices or dealer quotes for similar instruments
- The fair value of forward foreign exchange contracts is determined using forward exchange rates at the statement of financial position date, with the resulting value discounted back to present value

Other techniques, such as discounted cash flow analysis, are used to determine fair value for the remaining financial instruments. For trade and other receivables that are classified as current assets, the book value approximates a reasonable estimate of fair value.

(3) Valuation technique and the inputs

The Company utilizes a present value technique to discount future cash flows using a proper interest rate for corporate bonds, government and public bonds, and bank debentures that are classified as Level 2 in the fair value hierarchy.

The following table presents the valuation technique and the inputs used for major financial instruments classified as Level 3 as of June 30, 2020.

(In millions of Korean won)

Classification	Fair value	Valuation technique	Level 3 inputs	Input range (Weighted average)
Financial assets at fair value through other comprehensive income				
Maltani	₩ 9,524	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0%)
			Weighted average cost of capital	9.1%~11.1%(10.1%)
Samsung Venture Investment	13,394	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0%)
			Weighted average cost of capital	18.3%~20.3%(19.3%)
Coming Incorporated convertible preference shares	3,915,949	Trinomial model	Risk-adjusted discount rate	4.9%~6.9%(5.9%)
			Price volatility	28.6%~34.6%(31.6%)
Long-term other payables				
Contingent financial liability	2,401	Probability-weighted discounted cash flow	Applicable probability rate	50%

(4) Changes in Level 3 instruments during the six month period ended June 30, 2020 and 2019 are as follows:

<i>(In millions of Korean won)</i>	2020		2019	
Financial assets				
Balance as of January 1	₩	7,407,684	₩	7,165,466
Acquisitions		594,430		1,952,720
Disposals		(1,836,610)		(2,265,529)
Amount recognized in profit or loss		(17,065)		16,001
Amount recognized in other comprehensive income		(87,117)		504,177
Other		109,850		98,097
Balance as of June 30	₩	6,171,172	₩	7,470,932

<i>(In millions of Korean won)</i>	2020		2019	
Financial liabilities				
Balance as of January 1	₩	2,316	₩	14,502
Repayment		-		(671)
Amount recognized in profit or loss		-		(11,454)
Other		85		381
Balance as of June 30	₩	2,401	₩	2,758

(5) Sensitivity analysis for recurring fair value measurements categorized within Level 3

Sensitivity analysis of financial instruments is performed to measure favorable and unfavorable changes in the fair value of financial instruments which are affected by the unobservable parameters, using a statistical technique. When the fair value is affected by more than two input parameters, the amounts represent the most favorable or unfavorable.

The results of the sensitivity analysis for effect on profit or loss (before tax amount for other comprehensive income or loss) from changes in inputs for major financial instruments which are categorized within Level 3 and subject to sensitivity analysis are as follows:

<i>(In millions of Korean won)</i>	Favorable changes				Unfavorable changes			
	Profit or loss		Equity		Profit or loss		Equity	
Financial assets at fair value through other comprehensive income ¹	₩	-	₩	337,604	₩	-	₩	(233,424)

¹ For equity securities, changes in fair value are calculated with the correlation between growth rate (-1%~1%), volatility (28.6%~34.6%) and discount rate, which are significant unobservable inputs.

26. Segment Information

(A) Operating segment information

The chief operating decision-maker has been identified as the Management Committee. The Company determines operating segments based on the units reported to the Management Committee. The Management Committee reviews the operating profits of each operating segment in order to assess performance and to make strategic decisions regarding the allocation of resources to the segment.

The operating segments are product-based and are identified based on the internal organization and revenue streams. As of the reporting date, the operating segments are comprised of CE, IM, DS (Semiconductor and DP), Harman, and others.

The segment information for each reporting period such as depreciation, amortization of intangible assets, and operating profit is prepared after the allocation of internal transaction adjustments. Total assets and liabilities of each operating segment are excluded from the disclosure as these have not been provided regularly to the Management Committee.

(1) For the six month period ended June 30, 2020

(In millions of Korean won)	CE	IM	DS			Harman	Total ¹	Intercompany elimination	Consolidated
			Total ¹	Semiconductor	DP				
Total revenue	₩ 45,527,678	₩ 96,759,659	₩ 100,068,482	₩ 70,214,775	₩ 28,549,703	₩ 4,147,091	₩ 247,350,333	₩(139,059,013)	₩108,291,320
Intercompany revenue	(25,057,292)	(50,002,865)	(50,886,967)	(34,339,518)	(15,239,377)	(503,298)	(139,059,013)	139,059,013	-
Net revenue ²	20,470,386	46,756,794	49,181,515	35,875,257	13,310,326	3,643,792	108,291,320	-	108,291,320
Depreciation	287,534	482,635	11,742,538	8,578,701	3,151,791	173,622	13,199,555	-	13,199,555
Amortization	37,019	700,982	673,151	536,814	131,374	118,807	1,624,379	-	1,624,379
Operating profit	1,184,645	4,599,623	9,455,711	9,419,763	11,502	(280,998)	14,593,637	-	14,593,637

¹ Other operating segments are not separately disclosed.

² Net revenue includes intersegment revenues.

(2) For the three month period ended June 30, 2020

(In millions of Korean won)	CE	IM	DS			Harman	Total ¹	Intercompany elimination	Consolidated
			Total ¹	Semiconductor	DP				
Total revenue	₩ 23,115,098	₩ 41,123,507	₩ 51,827,781	₩ 36,732,743	₩ 14,418,423	₩ 1,767,247	₩ 118,217,216	₩(65,251,074)	₩ 52,966,142
Intercompany revenue	(12,799,731)	(20,370,795)	(26,778,111)	(18,501,764)	(7,696,229)	(224,737)	(65,251,074)	65,251,074	-
Net revenue ²	10,315,367	20,752,712	25,049,670	18,230,979	6,722,194	1,542,509	52,966,142	-	52,966,142
Depreciation	150,848	215,899	5,910,642	4,346,064	1,558,741	83,189	6,608,388	-	6,608,388
Amortization	22,898	348,143	292,069	268,339	21,240	59,917	809,941	-	809,941
Operating profit	719,347	1,950,062	5,735,893	5,427,077	298,368	(93,383)	8,146,292	-	8,146,292

¹ Other operating segments are not separately disclosed.

² Net revenue includes intersegment revenues.

(3) For the six month period ended June 30, 2019

<i>(In millions of Korean won)</i>	CE ¹	IM	DS			Harman	Total ²	Intercompany elimination	Consolidated
			Total ²	Semiconductor	DP				
Total revenue	₩ 48,101,826	₩ 112,117,316	₩ 86,638,576	₩ 56,864,310	₩ 28,544,076	₩ 5,550,217	₩ 253,373,897	₩(144,861,247)	₩ 108,512,650
Intercompany revenue	(26,720,814)	(59,056,569)	(42,491,909)	(26,304,211)	(14,798,087)	(837,578)	(144,861,247)	144,861,247	-
Net revenue ³	21,381,012	53,060,747	44,146,667	30,560,099	13,745,989	4,712,639	108,512,650	-	108,512,650
Depreciation	279,217	618,538	12,016,220	8,703,892	3,294,142	161,444	13,481,068	-	13,481,068
Amortization	24,337	50,959	231,231	175,097	52,575	112,562	505,176	-	505,176
Operating profit	1,196,576	3,835,257	7,683,110	7,520,639	187,445	100,371	12,830,347	-	12,830,347

¹ Segment information has been restated due to the reclassification of Healthcare and Medical Equipment business to CE segment.

² Other operating segments are not separately disclosed.

³ Net revenue includes intersegment revenues.

(4) For the three month period ended June 30, 2019

<i>(In millions of Korean won)</i>	CE ¹	IM	DS			Harman	Total ²	Intercompany elimination	Consolidated
			Total ²	Semiconductor	DP				
Total revenue	₩ 24,915,808	₩ 53,345,125	₩ 47,147,836	₩ 30,742,243	₩ 15,877,837	₩ 2,939,448	₩ 128,944,654	₩(72,817,550)	₩ 56,127,104
Intercompany revenue	(13,702,554)	(27,484,649)	(23,616,539)	(14,654,552)	(8,256,251)	(421,545)	(72,817,550)	72,817,550	-
Net revenue ³	11,213,254	25,860,476	23,531,297	16,087,691	7,621,586	2,517,903	56,127,104	-	56,127,104
Depreciation	138,263	305,806	5,891,312	4,246,066	1,636,412	85,232	6,640,252	-	6,640,252
Amortization	12,106	25,820	114,366	86,882	25,702	57,732	250,448	-	250,448
Operating profit	686,364	1,560,969	4,146,967	3,398,248	748,187	92,374	6,597,065	-	6,597,065

¹ Segment information has been restated due to the reclassification of Healthcare and Medical Equipment business to CE segment.

² Other operating segments are not separately disclosed.

³ Net revenue includes intersegment revenues.

(B) Regional information

The regional segment information provided to the Management Committee for the reportable segments as of and for the three and six month period ended June 30, 2020 and 2019 are as follows:

(1) As of and for the six month period ended June 30, 2020

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Consolidated
Net revenue	₩ 17,281,474	₩ 34,756,685	₩ 19,528,403	₩ 17,282,110	₩ 19,442,648	₩ -	₩ 108,291,320
Non-current assets ¹	102,733,180	9,710,747	6,717,757	10,714,989	14,738,071	(711,912)	143,902,832

¹ Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets

(2) As of and for the three month period ended June 30, 2020

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Consolidated
Net revenue	₩ 9,393,870	₩ 16,496,213	₩ 8,589,578	₩ 8,250,211	₩ 10,236,270	₩ -	₩ 52,966,142
Non-current assets ¹	102,733,180	9,710,747	6,717,757	10,714,989	14,738,071	(711,912)	143,902,832

¹ Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets

(3) As of and for the six month period ended June 30, 2019

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Consolidated
Net revenue	₩ 16,214,659	₩ 33,718,420	₩ 20,044,227	₩ 21,349,656	₩ 17,185,688	₩ -	₩ 108,512,650
Non-current assets ¹	93,758,765	10,528,481	6,622,079	11,817,340	9,745,330	(304,781)	132,167,214

¹ Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets

(4) As of and for the three month period ended June 30, 2019

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Consolidated
Net revenue	₩ 8,897,591	₩ 17,004,312	₩ 9,806,214	₩ 11,106,459	₩ 9,312,528	₩ -	₩ 56,127,104
Non-current assets ¹	93,758,765	10,528,481	6,622,079	11,817,340	9,745,330	(304,781)	132,167,214

¹ Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets

27. Related Party Transactions

(A) Sale and purchase transactions

Sale and purchase transactions with related parties for the six month period ended June 30, 2020 and 2019 are as follows:

		2020			
(In millions of Korean won)	Name of company ¹	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS	₩ 63,803	₩ -	₩ 845,359	₩ 225,949
	Samsung Electro-Mechanics	27,832	-	891,727	-
	Samsung SDI	40,484	272	294,295	32,768
	Cheil Worldwide	25,364	-	342,756	-
	Other	547,827	29	4,481,425	55,722
	Total (Associates and joint ventures)	₩ 705,310	₩ 301	₩ 6,855,562	₩ 314,439
Other related parties	Samsung C&T	₩ 44,168	₩ 2,492	₩ 174,588	₩ 1,222,976
	Other	150,467	-	539,999	187,040
	Total (Other related parties)	₩ 194,635	₩ 2,492	₩ 714,587	₩ 1,410,016
Other ²	Samsung Engineering	₩ 3,157	-	₩ 35,340	₩ 473,740
	S-1	12,082	-	215,993	15,404
	Other	43,085	-	131,880	37,532
	Total (Other)	₩ 58,324	₩ -	₩ 383,213	₩ 526,676

¹ Transactions with separate entities that are related parties of the Company.

² Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

		2019			
(In millions of Korean won)	Name of company ¹	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS	₩ 56,665	-	₩ 1,070,182	₩ 180,487
	Samsung Electro-Mechanics	38,897	-	1,140,102	16
	Samsung SDI	61,194	16,061	308,318	29,238
	Cheil Worldwide	23,958	-	410,212	958
	Other	525,919	-	5,145,473	126,248
	Total (Associates and joint ventures)	₩ 706,633	₩ 16,061	₩ 8,074,287	₩ 336,947
Other related parties	Samsung C&T	₩ 66,569	-	₩ 171,422	₩ 2,342,820
	Other	93,932	-	549,807	307,728
	Total (Other related parties)	₩ 160,501	-	₩ 721,229	₩ 2,650,548
Other ²	Samsung Engineering	₩ 1,686	-	₩ 19,228	₩ 916,276
	S-1	10,916	-	199,928	6,539
	Other	68,270	-	116,525	170,783
	Total (Other)	₩ 80,872	-	₩ 335,681	₩ 1,093,598

¹ Transactions with separate entities that are related parties of the Company.

² Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

(B) Balances of receivables and payables

Balances of receivables and payables arising from sales and purchases of goods and services as of June 30, 2020 and December 31, 2019 are as follows:

<i>(In millions of Korean won)</i>		Name of company ¹	June 30, 2020		
			Receivables	Payables ²	
Associates and joint ventures	Samsung SDS	₩	7,763	₩	494,960
	Samsung Electro-Mechanics		601		133,899
	Samsung SDI		102,882		89,272
	Cheil Worldwide		207		343,832
	Other		225,939		805,091
	Total (Associates and joint ventures)		₩	337,392	₩
Other related parties	Samsung C&T	₩	244,210	₩	1,168,821
	Other		23,435		199,033
	Total (Other related parties)		₩	267,645	₩
Other ³	Samsung Engineering	₩	2,499	₩	166,577
	S-1		6,314		38,014
	Other		6,575		31,487
	Total (Other)		₩	15,388	₩

¹ Balances due from and to separate entities that are related parties of the Company.

² Payables and others include lease liabilities.

³ Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

<i>(In millions of Korean won)</i>		Name of company ¹	December 31, 2019		
			Receivables	Payables ²	
Associates and joint ventures	Samsung SDS	₩	19,723	₩	636,169
	Samsung Electro-Mechanics		2,457		207,339
	Samsung SDI		103,809		135,048
	Cheil Worldwide		423		415,785
	Other		177,491		997,632
	Total (Associates and joint ventures)		₩	303,903	₩
Other related parties	Samsung C&T	₩	230,535	₩	1,215,575
	Other		18,884		170,130
	Total (Other related parties)		₩	249,419	₩
Other ³	Samsung Engineering	₩	2,734	₩	629,584
	S-1		1,464		50,498
	Other		12,211		115,072
	Total (Other)		₩	16,409	₩

¹ Balances due from and to separate entities that are related parties of the Company.

² Payables and others include lease liabilities.

³ Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

- (C) For the six month period ended June 30, 2020, the Company invested ₩ 19,424 million in associates and joint ventures (₩ 5,544 million for the six month period ended June 30, 2019). In addition, there was no recovered amount from associates and joint ventures during the six month period ended June 30, 2020 (₩ 306 million for the six month period ended June 30, 2019). The Company acquired PLP business from Samsung Electro-mechanics Co., Ltd., an associate, at ₩ 785,000 million during the six month period ended June 30, 2019.
- (D) For the six month period ended June 30, 2020, the Company declared ₩ 830,406 million of dividends (₩ 830,778 million for the six month period ended June 30, 2019) to related parties. In addition, for the six month period ended June 30, 2020 and 2019, the Company declared ₩ 62,872 million of dividends to the entities that are not related parties of the Company in accordance with *Korean IFRS 1024*, but belong to the same conglomerate according to the Monopoly Regulation and Fair Trade Act. As of June 30, 2020 and December 31, 2019, no dividends declared remains unpaid.
- (E) During the six month period ended June 30, 2020 and 2019, the Company did not enter into any lease agreement with its related parties, and lease payments to the related parties amounted to ₩ 27,759 million and ₩ 28,594 million, respectively.
- (F) Key management compensation

The compensation paid or payable to key management (executive directors) for their services for the six month period ended June 30, 2020 and 2019 consists of:

<i>(In millions of Korean won)</i>	2020		2019	
Short-term employee benefits	₩	3,743	₩	3,032
Post-employment benefits		482		703
Other long-term employee benefits		3,573		3,225

3. Other financial information

A. Restatement of financial statements and other matters to note

(1) Restatement of financial statements: N/A

(2) Acquisition, divestment, asset sales, and sale of business

The major acquisition, divestment and transfer of business during past three years are as follows.

[PLP Business]

- Details of acquisition

In accordance with the resolution of the Board of Directors on April 30, 2019, the Company acquired PLP business from Samsung Electro-Mechanics Co., Ltd.(location: South Korea; CEO: Yun Tae Lee) at a price of KRW 785,000 million on June 1, 2019 to strengthen its semiconductor competitiveness through securing next-generation packaging technology.

- Details of the above statement can be found in the “Business Acquisition from Related Parties”, published in DART (<http://dart.fss.or.kr/>) on April 30, 2019.

(KRW 100 mil)

	Account	Forecast		Actual			
		1st Year	2nd Year	1st Year		2nd Year	
				Actual	Difference	Actual	Difference
PLP Business	Sales	101	219	-	-	-	-
	Operating Income	(1,273)	(2,155)	(1,095)	14%	(107)	-
	Net Income	(1,273)	(2,155)	(1,095)	14%	(107)	-

Actual operating income and net income for the first year of acquisition differs by 14% from the forecast due to several factors such as reduction in wages.

Actual figures for the second year of acquisition is result for the six month period ended June 30, 2020, and its difference with the forecast will be disclosed in the Annual business report for the year ending December 31, 2020.

No third-party sales is recognized from PLP business as its products are internally transferred within the Company’s manufacturing process.

[Corephotonics Ltd.]

- Samsung Electronics Benelux B.V. (SEBN), the Company’s subsidiary, acquired 83.9% of the equity shares of Corephotonics Ltd.(location: Tel Aviv, Israel; CEO: David Mendlovic) on January 28, 2019 and additional 8.5% on March 4, 2019 to secure CIS optical technology and talent.

(3) Information on the accounting treatment of the sales of assets related to asset backed securities and contingent liabilities

Accounting Treatment of the sale of assets related to asset backed securities:

- Not applicable

Litigation

The Company is involved in various claims, disputes, and investigations conducted by regulatory bodies, which arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, as of the reporting date, the Company believes the outcome will not have a material impact on the financial position of the Company.

Debt guarantee

- Domestic: Not applicable

- Overseas:

(USD thousand)

Company	Relationship	Creditor	Guarantee Expiry date	Transactions				Limit of guarantee
				Beginning of period	Increase	Decrease	End of period	
SEA	Subsidiary	BOA etc.	13-Jun-21	-	-	-	-	1,328,000
SEM	Subsidiary	BBVA etc.	13-Jun-21	-	-	-	-	485,000
SAMCOL	Subsidiary	Citibank etc.	13-Jun-21	89,718	-	(38,119)	51,599	230,000
SEDA	Subsidiary	BRADESCO etc.	16-Dec-20	-	-	-	-	639,000
SECH	Subsidiary	Santander etc.	13-Jun-21	17,256	52,192	-	69,448	142,000
SEPR	Subsidiary	BBVA etc.	13-Jun-21	90,587	24,233	-	114,820	230,000
SSA	Subsidiary	SCB etc.	13-Jun-21	-	-	-	-	318,000
SEMAG	Subsidiary	SocGen etc.	16-Dec-20	-	-	-	-	110,000
SETK	Subsidiary	BNP etc.	13-Jun-21	64,752	-	(228)	64,524	837,000
SECE	Subsidiary	Citibank etc.	16-Dec-20	-	-	-	-	75,609
SEEG	Subsidiary	HSBC	13-Jun-21	-	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	13-Jun-21	-	-	-	-	145,000
SJC	Subsidiary	Mizuho etc.	31-May-21	-	-	-	-	901,016
SEUC	Subsidiary	Credit Agricole etc.	13-Jun-21	-	-	-	-	150,000
SEDAM	Subsidiary	Citibank etc.	13-Jun-21	-	-	-	-	222,000
SECA	Subsidiary	BOA	08-Nov-20	-	-	-	-	70,000
SELA	Subsidiary	Citibank	16-Dec-20	-	10,000	-	10,000	120,000
SEEH	Subsidiary	HSBC etc.	13-Jun-21	-	-	-	-	594,000
SERK	Subsidiary	SocGen etc.	13-Jun-21	-	-	-	-	220,000
SELV	Subsidiary	Citibank	16-Dec-20	-	-	-	-	10,000
SAPL	Subsidiary	BOA etc.	13-Jun-21	-	-	-	-	366,800
SEV	Subsidiary	SCB	13-Jun-21	-	-	-	-	15,000
SAVINA	Subsidiary	HSBC etc.	13-Jun-21	-	-	-	-	71,000
SET	Subsidiary	SCB	08-Nov-20	-	-	-	-	30,000
SEPCO	Subsidiary	HSBC etc.	13-Jun-21	-	18,090	-	18,090	87,200
SCIC	Subsidiary	HSBC etc.	16-Dec-20	-	-	-	-	350,000
SME	Subsidiary	SCB	08-Nov-20	-	-	-	-	110,000
SAMEX	Subsidiary	Citibank	16-Dec-20	-	-	-	-	5,000
SEASA	Subsidiary	Citibank	16-Dec-20	-	-	-	-	2,000
SSAP	Subsidiary	SCB	08-Nov-20	-	-	-	-	30,000
SEPM	Subsidiary	HSBC	13-Jun-21	-	-	-	-	35,000
SESAR	Subsidiary	HSBC	13-Jun-21	-	-	-	-	50,000
AdGear Technologies Inc.	Subsidiary	BOA	08-Nov-20	-	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	13-Jun-21	-	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	08-Nov-20	-	-	-	-	25,000
Harman RUS CIS LLC	Subsidiary	SocGen	08-Nov-20	-	-	-	-	15,000
Harman Holding Limited	Subsidiary	HSBC	13-Jun-21	-	-	-	-	30,000
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	08-Nov-20	-	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Subsidiary							
Harman Finance International, SCA	Subsidiary	JP Morgan etc.	27-May-22	392,210	1,367	-	393,577	393,577
SDN	Subsidiary	SIEL	17-Feb-23	-	13,200	-	13,200	462,000
Total				654,523	119,082	(38,347)	735,258	9,106,202

Information above are prepared in consolidated basis. Debt guarantees for Harman Finance International, SCA, and SDN are provided by Harman International Industries, Inc. and Samsung Display Co., Ltd., respectively.

SEC requires Board approval for individual guarantees exceeding 2.5% of total equity. When the guarantee amount is between 0.1% and/or less than 2.5%, the approval decision is delegated to the Management Committee. Debt guarantees provided to SDN during the six month period ended June 30, 2020 were approved by Board of Samsung Display Co., Ltd.

SEC claims fees on the debt guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc. In 2019, the Company claimed approximately USD 238,000 as guarantee fee and, as of the reporting date, has collected the amount.

Refer to the notes to the consolidated financial statements for the information on contingent liabilities.

(4) Other matters requiring attention in relation to the use of the financial statements

Emphasis of matter and key audit matter in Independent auditor's report

Period	Emphasis of matter	Key audit matter
2020 2Q	Not applicable	Not applicable
2019	Not applicable	(Consolidated financial statement) 1. Sales promotion activities related to the sales of products 2. Impairment of goodwill and intangible assets with indefinite useful lives 3. Appropriateness of depreciation expense cut-off on property, plant and equipment (Separate financial statement) 1. Sales promotion activities related to the sales of products 2. Appropriateness of depreciation expense cut-off on property, plant and equipment
2018	Not applicable	(Consolidated financial statement) 1. Sales promotion activities related to the sales of products 2. Impairment of goodwill and intangible assets with indefinite useful lives 3. Appropriateness of depreciation expense cut-off on property, plant and equipment 4. Impairment of investments in associates and joint ventures (Separate financial statement) 1. Sales promotion activities related to the sales of products 2. Appropriateness of depreciation expense cut-off on property, plant and equipment

B. Allowance for bad debt

The allowances for bad debt by account over the past 3 years are as follows:

(KRW mil)

Period	Account	Receivables amount	Allowance amount	Allowance (%)
2020 2Q	Trade receivables	33,334,279	344,517	1.0%
	Short-term loans	9,010	86	1.0%
	Other receivables	3,768,913	66,131	1.8%
	Advances	1,489,276	2,874	0.2%
	Trade receivables (long-term)	351,867	-	0.0%
	Other receivables (long-term)	378,628	226	0.1%
	Advances (long-term)	823,312	7,760	0.9%
	Long-term loans	123,145	1,361	1.1%
	Total	40,278,430	422,955	1.1%
2019	Trade receivables	35,471,674	340,331	1.0%
	Short-term loans	8,744	82	0.9%
	Other receivables	4,237,479	58,359	1.4%
	Advances	1,430,317	3,484	0.2%
	Trade receivables (long-term)	411,229	79	0.0%
	Other receivables (long-term)	346,780	307	0.1%
	Advances (long-term)	774,472	7,333	0.9%
	Long-term loans	120,540	1,335	1.1%
	Total	42,801,235	411,310	1.0%
2018	Trade receivables	34,433,876	566,143	1.6%
	Short-term loans	10,177	54	0.5%
	Other receivables	3,111,442	30,708	1.0%
	Advances	1,364,111	2,304	0.2%
	Trade receivables (long-term)	1,046,252	5,421	0.5%
	Other receivables (long-term)	223,986	337	0.2%
	Advances (long-term)	960,392	9,366	1.0%
	Long-term loans	125,700	549	0.4%
	Total	41,275,936	614,882	1.5%

Based on consolidated financial statements.

Receivables amount represents the value after deducting present value discount account.

Allowance for bad debt by year

(KRW mil)

	2020 2Q	2019	2018
1. Allowance for bad debt (beginning balance)	411,310	614,882	670,775
2. Net bad debt expense (① - ② ± ③)	39,217	16,715	18,697
① Bad debt expense, etc (Write-off)	27,768	6,579	24,721
② Bad debt recovered	716	11,294	6,024
③ Others	12,165	21,430	-
3. Bad debts expense	50,862	(186,857)	(37,196)
4. Allowance for bad debts (Ending balance)	422,955	411,310	614,882

Based on consolidated financial statements.

The guideline for bad debt allowances for trade receivables

(1) Calculation of bad debt allowance

- Bad debt allowance is calculated using an expected credit loss impairment model which is based on write-off experience rate and future expected bad debt amount.

(2) Calculation basis of write-off experience rate and future expected bad debt:

- Write-off experience rate for each aging group of receivables is calculated based on the actual rate of credit losses to three-year average receivables balance.
- Future expected bad debt is determined taking into consideration cases of debtor bankruptcy, compulsory execution, death, disappearance, credit information of debtor and forward-looking information.

[Bad debt allowance by circumstance]

Circumstance	Rate of allowance
Dispute or conflict	25%
Receivable through utilization of third party collection agency	50%
Receivable under litigation	75%
Customer filed or in the process of filing bankruptcy	100%

(3) Instruction: Write-off is recorded when trade receivables contain the following characteristics:

- Objective proof of bad debts, such as bankruptcy, compulsory execution, discontinuance of business, debtor's death or disappearance
- Legal action has failed or the right of collection has been extinguished.
- When the third party collection agency notifies that collection is not possible.
- When the collateral is sold or insurance is received.
- When collection expense exceeds receivables amount.

The outstanding period of trade receivables

(KRW mil)

	Less than 6 months	6 months ~ 1 year	1 year ~ 3 years	More than 3 years	Total
Amount	33,482,369	35,860	133,151	34,766	33,686,146
Ratio	99.4%	0.1%	0.4%	0.1%	100.0%

Base on consolidated financial statements.

Receivables amount in net present value (consolidated).

C. Inventory

- The inventory status by Division over the last three years is as follows:

(KRW mil)

Division		Category	2020 2Q	2019	2018	Note
CE		Finished goods	1,798,094	1,554,116	1,635,420	
		Work in process	185,089	146,387	121,043	
		Raw material	2,755,619	2,012,159	2,498,358	
		Material in transit	2,150,863	1,895,387	1,923,804	
		Total	6,889,665	5,608,049	6,178,625	
IM		Finished goods	2,540,046	2,426,034	2,525,787	
		Work in process	428,297	420,664	624,129	
		Raw material	4,735,583	3,228,906	3,305,566	
		Material in transit	879,137	810,599	715,361	
		Total	8,583,063	6,886,203	7,170,843	
DS	Semi-conductor	Finished goods	1,855,221	1,740,881	2,498,132	
		Work in process	8,964,733	8,772,850	9,378,528	
		Raw material	1,562,055	1,332,267	863,607	
		Material in transit	11,414	66,033	22,697	
		Total	12,393,423	11,912,031	12,762,964	
	DP	Finished goods	239,315	345,940	549,432	
		Work in process	457,068	488,468	559,960	
		Raw Material	544,591	634,990	720,622	
		Material in transit	25,048	22,214	82,677	
		Total	1,266,022	1,491,612	1,912,691	
	DS total	Finished goods	2,160,446	2,130,587	3,107,878	
		Work in process	9,481,363	9,302,907	10,297,065	
		Raw material	2,084,967	1,991,422	1,741,613	
		Material in transit	80,441	89,044	48,306	
		Total	13,807,217	13,513,960	15,194,862	
Harman	Finished goods	608,621	746,742	558,014		
	Work in process	89,184	90,249	87,751		
	Raw material	481,807	372,231	363,432		
	Material in transit	118,899	145,329	141,524		
	Total	1,298,511	1,354,551	1,150,721		
Total	Finished goods	7,283,715	8,115,116	8,836,098		
	Work in process	10,112,443	9,886,634	11,066,511		
	Raw material	9,589,779	7,747,110	8,048,139		
	Material in transit	2,659,592	1,017,604	1,033,956		
	Total	29,645,529	26,766,464	28,984,704		
Inventory ratio (%) [Inventory ÷ Total Assets]			8.3%	7.6%	8.5%	
Inventory turnover (x) [Yearly COGS ÷ {(Beginning of inventory + End of inventory)÷2}]			4.7	5.3	4.9	

Inventory counts

(1) Inspection date

- End of May and November (twice a year)
- For the difference in inventories between the inspection date and at the end of the year, the Company checks all the warehouse record during the period in order to confirm the existence of the inventories as of the date of the financial statements.

(2) Inspection method

- Internal warehouse: Closed & Total Inspection
- ※ Sample check in semi-conductor and DP inventory, SVC materials
- Outside warehouse
Perform check for the possession confirmation documents and sample tests at the third party warehouse and Inventory in transit
- External auditors join and observe the inspection and carry out sample tests to check the existence and completeness.
- ※ For the HQ, the most recent inventory inspection was conducted on May 29, May 30, and June 1, 2020. Subsidiaries conducted the inventory inspection during the same period as HQ except for countries that restrict movements due to recent spread of COVID-19.

Inventory aging and valuation

Inventories are stated at the lower of cost or net realizable value. Inventory as of June 30, 2020 are as follows:

(KRW mil)

Category	Acquisition cost	Inventory valuation reserve	Balance	Note
Finished goods	7,699,780	(416,065)	7,283,715	
Work in process	10,967,776	(855,333)	10,112,443	
Raw material	10,307,644	(717,865)	9,589,779	
Material in transit	2,659,592	-	2,659,592	
Total	31,634,792	(1,989,263)	29,645,529	

Based on consolidated financial statements.

D. Fair value estimation

Refer to 6. Financial Instruments by Category and 31. Financial Risk Management in 『Ⅲ. Financial Affairs』.

E. List of issued debt securities

Issued debt securities

(As of June 30, 2020)

(KRW mil, %)

Issuing company	Type of securities	Issuance method	Date of issuance	Total nominal amount	Interest rate	Rating (rating institution)	Maturity date	Payment status	Management company
Samsung Electronics	Corporate bonds	Public offering	Oct 2, 1997	120,070	7.7	AA-(S&P), Aa3(Moody's)	Oct 1, 2027	Partial redemption	Goldman Sachs et al.
Harman International Industries, Inc	Corporate bonds	Public offering	May 6, 2015	480,280	4.2	Baa1 (Moody's), A (S&P)	May 15, 2025	Unredeemed	J.P.Morgan et al.
Harman Finance International, SCA	Corporate bonds	Public offering	May 20, 2015	472,568	2.0	Baa1 (Moody's), A (S&P)	May 27, 2022	Unredeemed	HSBC et al.
Dowinsys Co., Ltd	Corporate bonds	Private placement	Feb 28, 2020	23,000	0.5	-	Feb 28, 2025	Unredeemed	-
SEMES	Commercial paper	Private placement	Jan 3, 2020	80,000	2.0	A1	Apr 1, 2020	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 4, 2020	65,000	1.9	A1	May 4, 2020	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 26, 2020	30,000	1.8	A1	May 26, 2020	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 26, 2020	50,000	1.8	A1	May 22, 2020	Redeemed	-
SEMES	Commercial paper	Private placement	Apr 1, 2020	50,000	2.1	A1	June 30, 2020	Redeemed	
SEMES	Commercial paper	Private placement	May 4, 2020	50,000	2.0	A1	July 31, 2020	Unredeemed	
SEMES	Commercial paper	Private placement	June 12, 2020	50,000	2.1	A1	Oct 5, 2020	Unredeemed	
SEMES	Commercial paper	Private placement	June 30, 2020	50,000	1.6	A1	Sep 28, 2020	Unredeemed	
Total	-	-	-	1,520,918	-	-	-	-	-

The exchange rate as of the base date has been applied.

The rating institutions of Commercial paper are NICE Investors Service and Korea Ratings Corporation.

Details and Compliance of the Bond Management Contract (Samsung Electronics)

(Base Date : June 30, 2020)

(KRW mil, %)

Name of security	Date of issuance	Maturity date	Issued amount	Settlement date of bond management contract	Debenture management company
US\$ 100,000,000 7.7% debenture	Oct 2, 1997	Oct 1, 2027	120,070	Oct 2, 1997	The Bank of New York Mellon Trust Company, N.A.

(Base Date: June 30, 2020)

Financial ratios	Contract details	Not applicable
	Implementation status	Not applicable
Constraint on collateral	Contract details	Less than 10% of net tangible assets
	Implementation status	Compliant (there is no collateral for the relevant assets)
Constraint on disposal of assets	Contract details	Certain requirements, such as transfer of obligations on the bond, must be satisfied to dispose all or most of an asset
	Implementation status	Compliant (disposed assets accounted for 0.1% of the total assets during 2020 2Q)
Constraint on governance	Contract Details	Not applicable
	Implementation Status	Not applicable
Submission of implementation report	Implementation status	Not applicable

The date of the bond management contract was signed on the same day as the Fiscal Agency Agreement; accordingly, the Bank of New York Mellon Trust Company, N.A. is under the authority of the Fiscal Agent.

The exchange rate as of the base date has been applied.

The net tangible assets subjected to the limitation of collaterals are production facilities and stocks owned by the Company.

The base date of implementation is the date when most recent financial statements were prepared, which are used to determine the status of implementation.

The constraint on governance is as of the Reporting Date.

Commercial Paper Balance(SEMES)

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 10 days	Above 10 days / under 30 days	Above 30 days / under 90 days	Above 90 days / under 180 days	Above 180 days / under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years	Total
Balance	Public	-	-	-	-	-	-	-	-	-
	Private	-	-	100,000	50,000	-	-	-	-	150,000
	Total	-	-	100,000	50,000	-	-	-	-	150,000

Short Term Bond Unredeemed Balance

N/A

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 10 days	Above 10 days / under 30 days	Above 30 days / under 90 days	Above 90 days / under 180 days	Above 180 days / under 1 year	Total	Issue limit	Balance limit
Balance	Public	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

Corporate Bond Unredeemed Balance

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Balance	Public	6,004	478,572	6,004	6,004	486,284	18,008	-	1,000,876
	Private	-	-	-	-	-	-	-	-
	Total	6,004	478,572	6,004	6,004	486,284	18,008	-	1,000,876

Based on consolidated financial statements.

The exchange rate as of the base date has been applied.

- Corporate Bond Unredeemed Balance (Samsung Electronics)

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	6,004	6,004	6,004	6,004	6,004	18,008	-	48,028
	Total	6,004	6,004	6,004	6,004	6,004	18,008	-	48,028

The exchange rate as of the base date has been applied.

- Corporate Bond Unredeemed Balance (Harman)

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	-	472,568	-	-	480,280	-	-	952,848
	Total	-	472,568	-	-	480,280	-	-	952,848

The exchange rate as of the base date has been applied.

- Corporate Bond Unredeemed Balance (Dowinsys)

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Private	-	-	-	-	23,000	-	-	23,000
	Total	-	-	-	-	23,000	-	-	23,000

Outstanding balance of corporate bonds are intercompany balances eliminated in consolidated financial statements

Hybrid Bond Outstanding Balance

N/A

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 5 years	Above 5 years / under 10 years	Above 10 years / under 15 years	Above 15 years / under 20 years	Above 20 years / under 30 years	Above 30 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

Contingent Convertible Bond Outstanding Balance

N/A

(Base Date: June 30, 2020)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 6 years	Above 10 years / under 20 years	Above 20 years / under 30 years	Above 30 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-

IV. Management Discussion and Analysis

Pursuant to the reporting guidelines set forth by the *Financial Supervisory Service* of South Korea, the Management Discussion and Analysis section, reported in the annual Business Report, is not included in quarterly and half year reports.

V. Auditor's Report

1. Introduction

Deloitte Anjin conducted review on the Company's consolidated/separate statements of financial position of as at June 30, 2020, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the six month period then ended. The consolidated/separate financial statements for the six month period ended June 30, 2020, are presented fairly, in all material respects, in accordance with Korean IFRS 1034 Interim Financial Reporting.

Samil PwC conducted audits on the Company's consolidated/separate statements of financial position as at December 31, 2019, and 2018, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the years then ended and expressed an unqualified opinion on those financial statements. All of the Company's subsidiaries were expressed unqualified opinion for the years ended December 31, 2019, and 2018.

Period end	Company Auditor	Audit Opinion	Emphasis of Matter	Key Audit Matter(s)
Jun 30, 2020	Deloitte Anjin	Not applicable	Not applicable	Not applicable
Dec 31, 2019	Samil PwC	Unqualified	Not applicable	(Consolidated) 1. Sales promotion activities related to the sale of products. 2. Impairment of goodwill and intangible assets with indefinite useful lives. 3. Appropriateness of depreciation expense cut-off on property, plant and equipment. (Separate) 1. Sales promotion activities related to the sale of products. 2. Appropriateness of depreciation expense cut-off on property, plant and equipment.
Dec 31, 2018	Samil PwC	Unqualified	Not applicable	(Consolidated) 1. Sales promotion activities related to the sale of products. 2. Impairment of goodwill and intangible assets with indefinite useful lives. 3. Appropriateness of depreciation expense cut-off on property, plant and equipment 4. Impairment of investments in associates and joint ventures. (Separate) 1. Sales promotion activities related to the sale of products. 2. Appropriateness of depreciation expense cut-off on property, plant and equipment

Audit opinion on both separate and consolidated financial statements.

< Review plan for the quarter ended June 30, 2020 >

Review Period		Planned Dates
2020 1Q	Pre-review	Mar 9, 2020 ~ Mar 27, 2020
	Review	Apr 6, 2020 ~ May 13, 2020
2020 2Q	Pre-review	Jun 8, 2020 ~ Jun 26, 2020
	Review	Jul 6, 2020 ~ Aug 13, 2020

Above schedule are for the review of separate and consolidated financial statements for the quarters ended March 31, 2020 and June 30, 2020.

[Audit Contract Description]

(KRW mil)

Fiscal Period	Auditor	Description	Contract		Actual	
			Audit fee	Total Hours	Fee Claimed	Hours spent
Six month ended Jun 30, 2020	Deloitte Anjin	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	8,400	85,721	3,679	37,547
Year ended Dec 31, 2019	Samil PwC	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	6,481	69,685	6,481	69,021
Year ended Dec 31, 2018	Samil PwC	- Review of the interim consolidated/separate financial statements - Audit on consolidated/separate financial statements	4,400	50,004	4,400	50,401

Total hours spent for the year ended December 31, 2019 includes 67,639 hours of input time in respect of external audit in accordance with Chapter 3 of Article 18 under the Act on External Audit of Stock Companies, and 1,382 hours of other types of service.

[Non-Audit Service Contract Description]

(KRW mil)

Fiscal Period	Contract Date	Non-audit Service Description	Period for Service	Compensation	Note
Six month ended Jun 30, 2020	Jun 2017	E-discovery advisory services	Jan – Jun 2020	-	Deloitte Anjin
Year ended Dec 31, 2019	Feb 2019	SOC 2 certification and other advisory services	Feb – Sep 2019	258	Samil PwC
	Oct 2019	Custom tax and other advisory services	Oct – Dec 2019	127	
	Subtotal			385	
Year ended Dec 31, 2018	Nov 2017	Tax advisory	Jan ~ Mar 2018	194	Samil PwC
	Dec 2018	Tax advisory	Dec 2018	149	
	Dec 2016	Custom tax advisory	Jan ~ Dec 2018	253	
	Subtotal			596	

In addition to audit of the Company's financial statements, Deloitte Anjin has provided non-audit service described above. The Company has not expensed any fee for such service during the six month period ended June 30, 2020.

[Details of internal audit committee's discussion with Auditors]

No.	Date	Participants	Method	Details of discussion
1	Jan 28, 2020	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 1 other	Face-to-face meeting	<ul style="list-style-type: none"> - Key Audit Matters and others audit focus areas - Progress of audit of Internal Control over Financial Reporting - Other required communications at the completion stage of the audit
2	Apr 27, 2020	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 1 other	Face-to-face meeting	<ul style="list-style-type: none"> - Audit plan for the year ending December 31, 2020 - Discussion of quarterly review focus areas and independence of non-audit services - Other mandatory communications at the planning stage of the audit
3	Jul 28, 2020	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 1 other	Face-to-face meeting	<ul style="list-style-type: none"> - Annual audit plan and its progress - Plan for the Key Audit Matters selection - Progress of audit of Internal Control over Financial Reporting - Discussion of quarterly review focus areas and other required communications

Samil PwC discussed with the audit committee from April, 2018 to January, 2020, and Deloitte Anjin discussed with the audit committee from April 2020.

2. Change of Independent Auditor

Upon termination of the contract with previous auditor, Samil PwC, Deloitte Anjin has been designated as the Company's external auditor for three year ending December 31, 2022, in accordance with periodic designation regulation of Article 11 (1) and (2) of the "Act on External Audit of Stock Companies, Etc.", Article 17 of the "Enforcement Decree of the Act on External Audit of Stock Companies, Etc.", and Article 10 and Article 15 (1) of "Regulations on External Audit and Accounting"

There are 244 subsidiaries as at June 30, 2020. For the year ending December 31, 2020, 6 domestic subsidiaries, including Samsung Display Co., Ltd., changed external auditor from Samil PwC to Deloitte Anjin, 24 overseas subsidiaries, including Samsung Electronics America, Inc. (SEA), changed PwC to Deloitte, and 2 overseas subsidiaries, Samsung Electronica da Amazonia Ltda. (SEDA) and Samsung Gulf Electronics Co., Ltd. (SGE), changed KPMG to Deloitte. These changes in external auditors were to improve efficiency in audit of consolidated financial statements due to designation of the Company's external auditor.

Details of change in subsidiaries' external auditors are as follows:

Subsidiaries	Previous auditor	Current Auditor
Samsung Display Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Service Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Service CS Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Sales Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Logitech Co., Ltd.	Samil PwC	Deloitte Anjin
Mirero System Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics America, Inc. (SEA)	PwC	Deloitte
Samsung Semiconductor, Inc. (SSI)	PwC	Deloitte
Samsung Mexicana S.A. de C.V (SAMEX)	PwC	Deloitte
Samsung International, Inc. (SII)	PwC	Deloitte
Samsung Austin Semiconductor LLC. (SAS)	PwC	Deloitte
Samsung Electronics Mexico S.A. De C.V. (SEM)	PwC	Deloitte
Samsung Electronics (UK) Ltd. (SEUK)	PwC	Deloitte
Samsung Electronics Holding GmbH (SEHG)	PwC	Deloitte
Samsung Semiconductor Europe GmbH (SSEG)	PwC	Deloitte
Samsung Electronics GmbH (SEG)	PwC	Deloitte
Samsung Electronics Benelux B.V. (SEBN)	PwC	Deloitte
Samsung Vina Electronics Co., Ltd. (SAVINA)	PwC	Deloitte
Samsung Asia Private Ltd. (SAPL)	PwC	Deloitte
Samsung Electronics Australia Pty. Ltd. (SEAU)	PwC	Deloitte
Thai Samsung Electronics Co., Ltd. (TSE)	PwC	Deloitte
Samsung Display Vietnam Co., Ltd. (SDV)	PwC	Deloitte
Samsung Electronics Vietnam Co., Ltd. (SEV)	PwC	Deloitte
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	PwC	Deloitte
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	PwC	Deloitte
Samsung (CHINA) Investment Co., Ltd. (SCIC)	PwC	Deloitte
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	PwC	Deloitte
Samsung Electronics Saudi Arabia Ltd. (SESAR)	PwC	Deloitte
Samsung Electronics Turkey (SETK)	PwC	Deloitte
Samsung Electronics Rus Company LLC (SERC)	PwC	Deloitte
Samsung Electronica da Amazonia Ltda. (SEDA)	KPMG	Deloitte
Samsung Gulf Electronics Co., Ltd. (SGE)	KPMG	Deloitte

The newly acquired subsidiary during 2020, TeleWorld Solutions, Inc.(TWS), appointed PwC as their external auditor.

There were 240 subsidiaries as at December 31, 2019. The newly acquired entities during 2019, FOODIENT LTD. and Corephotonics Ltd. appointed PwC and E&Y, respectively, as the external auditor. The newly incorporated entities during 2019, Samsung Display Noida Private Limited (SDN) and Samsung Venture Capital Union SVIC No. 45 and No. 48 appointed PwC and KPMG, respectively, as the external auditor.

There were 252 subsidiaries as of December 31, 2018. Two subsidiaries including Samsung Display Dongguan Co., Ltd. have changed the external auditor to PwC. The newly incorporated entity during 2017, Samsung Electronics Home Appliance America, LLC, appointed PwC as the external auditor and newly incorporated entities during 2018, Samsung Venture Capital Union #40, Samsung Venture Capital Union #42, Samsung Venture Capital Union #43, appointed KPMG as the external auditor. The subsidiaries appointed the external auditors at their own decision.

Appointment of auditors were decided at at each newly acquired subsidiary's own discretion.

3. Regarding Internal Control

[Review and Audit opinion of Internal Control over Financial Reporting (ICFR)]

Fiscal Period	Group Auditor	Opinion	Remarks
Six month ended Jun 30, 2020	Deloitte Anjin	Not applicable	Not applicable
Year ended Dec 31, 2019	Samil PwC	[Audit Opinion] The Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on <i>Conceptual Framework for Designing and Operating Internal Control over Financial Reporting</i> .	Not applicable
Year ended Dec 31, 2018	Samil PwC	[Review Opinion] Nothing has come to attention that causes them to believe that management's report on the operations of the IACS is not presented fairly, in all material respects, in accordance with IACS standards.	Not applicable

VI. Corporate Governance

1. Board of Directors

A. Overview

The Board of Directors consisted of 11 directors, 5 of whom are Executive Directors (Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, and Yoon-ho Choi) and 6 Independent Directors (Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, and Han-jo Kim). The Board has appointed Jae-wan Bahk as Chairman as he will be able to mediate the different opinions of Directors and is most qualified to manage Board activities. The roles of Board Chairman and CEO have been separated to enhance the Board's independence and transparency.

The Board has six committees: Management Committee, Audit Committee, Independent Director Recommendation Committee, Related Party Transactions Committee, Compensation Committee, and Governance Committee.

[As of Jun 30, 2020]

Classification	Composition	Members	Head	Role
Board of Directors	5 Executive Directors 6 Independent Directors	Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, Yoon-ho Choi Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim	Jae-wan Bahk (Independent Director)	- Make resolutions on matters provided for by the relevant laws and regulations or the Articles of Incorporation, matters delegated by a general meeting of shareholders, as well as on important matters concerning basic policies and execution of business. - Supervise management.
Management Committee	5 Executive Directors	Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, Yoon-ho Choi	Ki-nam Kim (Executive Director)	- Deliberate and decide on matters related to finance, general management, and on matters specifically delegated by the Board.
Audit Committee	3 Independent Directors	Jae-wan Bahk, Sun-uk Kim, Han-jo Kim	Jae-wan Bahk (Independent Director)	- Review and audit matters concerning management of the Company, including the Company's financial situation.
Independent Director Recommendation Committee	3 Independent Directors	Jeong Kim, Byung-gook Park, Curie Ahn	Jeong Kim (Independent Director)	- Assess the independence, diversity, and ability of potential candidates for Independent Director positions. - Recommend candidates.
Related Party Transactions Committee	3 Independent Directors	Sun-uk Kim, Jae-wan Bahk, Han-jo Kim	Sun-uk Kim (Independent Director)	- Voluntarily comply with fair transaction regulations to enhance corporate transparency.
Compensation Committee	3 Independent Directors	Byung-gook Park, Jae-wan Bahk, Jeong Kim	Byung-gook Park (Independent Director)	- Ensure the objectivity and transparency of the decision-making process for Director compensation.
Governance Committee	6 Independent Directors	Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim	Jae-wan Bahk (Independent Director)	- Promote the Company's corporate social responsibility and act to enhance shareholder value.

Feb 14, 2020: Sang-hoon Lee resigned from his position of Executive Director.

Feb 20, 2020: Independent Director Byung-gook Park was appointed as the head of the compensation committee.

Feb 21, 2020: Independent Director Jae-wan Bahk was appointed as the Chairman of the Board.

Mar 18, 2020: Jong-hee Han and Yoon-ho Choi were newly appointed as Executive Directors at the AGM.

The number of Independent Directors and changes in the number are shown below.

Number of Directors	Number of Independent Directors	Changes of Independent Directors		
		Appointed	Dismissed	Resigned
11	6	-	-	-

B. Agendas considered and voting results (2020)

Date	Agenda	Results	Executive Directors (attendance)						Independent Directors (attendance)						
			Sang-hoon Lee (0%)	Ki-nam Kim (100%)	Hyun-suk Kim (100%)	Dong-jin Koh (100%)	Jong-hee Han (100%)	Yoon-ho Choi (100%)	Jae-wan Bahk (100%)	Sun-uk Kim (100%)	Byung-gook Park (100%)	Jeong Kim (100%)	Curie Ahn (100%)	Han-jo Kim (100%)	
Jan 30	① Approval of FY19 financial statements and annual business report	Approved	Absent	For	For	For				For	For	For	For	For	For
	② Charitable contribution to Samsung Dream Scholarship Foundation	Approved	Absent	For	For	For				For	For	For	For	For	For
	③ Adoption of electronic voting	Approved	Absent	For	For	For				For	For	For	For	For	For
	④ Appointment of Compliance Officer	Approved	Absent	For	For	For				For	For	For	For	For	For
	⑤ Approval of establishment and operation of Samsung Compliance Committee	Approved	Absent	For	For	For				For	For	For	For	For	For
	⑥ Revision of compliance standard	Approved	Absent	For	For	For				For	For	For	For	For	For
	※ Reported items: 1) Report on the internal accounting management system 2) Assessment of the internal accounting management system														
Feb 21	① Appointment of Board Chairman	Approved		For	For	For				For	For	For	For	For	For
	② Decision to convene the 51st AGM	Approved		For	For	For				For	For	For	For	For	For
	③ Decisions on the 51st AGM agenda items	Approved		For	For	For				For	For	For	For	For	For
	※ Reported Items: 1) FY19 annual audit report, 2) FY19 annual business report, 3) Assessment of the internal accounting management system - Item 1: Approval of FY19 financial statements, including balance sheet, income statement, and the statement of appropriation of retained earnings(draft), etc. - Item 2: Appointment of Executive Directors Item 2-1: Jong-hee Han Item 2-2: Yoon-ho Choi - Item 3: Approval of remuneration limit for Directors							N/A	N/A						
	④ Approval of 2020 social contribution matching fund	Approved	N/A	For	For	For				For	For	For	For	For	For
⑤ Donation to Chung-nam Samsung Institute	Approved			For	For				For	For	For	For	For	For	
Feb 26	① COVID-19 related emergency relief support	Approved		For	For	For				For	For	For	For	For	For
Mar 18	① Appointment of Board committee members	Approved		For	For	For	For	For	For	For	For	For	For	For	For
	② Setting remuneration of Directors	Approved		For	For	For	For	For	For	For	For	For	For	For	For
	③ Application for product liability insurance	Approved		For	For	For	For	For	For	For	For	For	For	For	For
Apr 29	① Approval of 1Q20 interim business report and quarterly dividend	Approved		For	For	For	For	For	For	For	For	For	For	For	For
	② Lease contract of office space in Seocho	Approved		For	For	For	For	For	For	For	For	For	For	For	For
	③ Charitable contributions	Approved		For	For	For	For	For	For	For	For	For	For	For	For
	④ Lease contract with Samsung SDI	Approved		For	For	For	For	For	For	For	For	For	For	For	For
	⑤ Donation to incentive fund for DS	Approved		For	For	For	For	For	For	For	For	For	For	For	For

	Division's suppliers													
May 27	① Package insurance policy for domestic operations	Approved		For	For	For	For	For	For	For	For	For	For	For
	② Charitable contributions	Approved		For	For	For	For	For	For	For	For	For	For	For
June 11	① Appointment of members of the Samsung Compliance Committee	Approved		For	For	For	For	For	For	For	For	For	For	For

Feb 14, 2020: Sang-hoon Lee resigned from his position of Executive Director.

Feb 21, 2020: Director Ki-nam Kim did not exercise his voting right on the agenda of donation to Chung-nam Samsung Institute as the donations is regarded as a transaction between a Director and Company under the Commercial Act and the Director has special interest in the Company as the CEO.

Feb 21, 2020: Independent Director Jae-wan Bahk was appointed as the Chairman of the Board.

Mar 18, 2020: Jong-hee Han and Yoon-ho Choi were newly appointed as Executive Directors at the AGM.

C. Committees

(1) Composition of Board Committees

[As of Jun 30, 2020]

Committee	Composition	Members	Responsibilities and authorities	Note
Management	5 Executive Directors	Ki-nam Kim (head), Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, Yoon-ho Choi	See below	-
Related Party Transactions	3 Independent Directors	Sun-uk Kim (head), Jae-wan Bahk, Han-jo Kim		-
Compensation	3 Independent Directors	Byung-gook Park (head), Jae-wan Bahk, Jeong Kim		-
Governance	6 Independent Directors	Jae-wan Bahk (head), Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim		-

The Audit Committee and Independent Director Recommendation Committee were excluded according to Corporate Disclosure Guidelines

(The Management Committee)

- Responsibilities: The Management Committee deliberates and decides on matters specified by Board regulations and resolutions or specifically delegated by the Board. The composition and operation of the management committee are determined by the Board.

- Authorities:

(A) General management

1. Annual or mid to long-term management policy and strategy
2. Key management strategy
3. Business planning and restructuring
4. Establishment, relocation, and withdrawal of overseas branch and corporation
5. Initiating cooperation such as strategic partnership with foreign companies
6. Acquisition or disposal of domestic and overseas subsidiaries (provided that the value of transaction exceeds 0.1% of total equity)
7. Other major management matters
8. Establishment, relocation, and withdrawal of branches and operations
9. Appointment or dismissal of supervisors
10. Suspension or shutdown of production over 5% of the total production in the recent year
11. Licensing agreements and technology transfer, partnership in regards to technology of over 0.5% of the total equity
12. Acquisitions and transfers of patents related to new material and new technology of over 0.5% of the total equity
13. Collection and destruction of products corresponding to over 5% of the total sales in the recent business year
14. Contracting for over 5% of the total sales in the recent business year
15. Contracting or canceling of single sales agency and suppliers over 5% of the total sales in the recent business year
16. Establishment of basic principles of organization management
17. Decision making on basic principles and any changes related to wages, bonus, and fringe benefits
18. Appointments, dismissals and changes of transfer agent
19. Closing of shareholder register and setting reference date
20. Establishment of corporate guidelines for business and management related activities

(B) Matters related to Finance

1. Acquisitions or disposals of equity investments with a value no less than 0.1% and less than 2.5% of the total equity
2. Direct overseas investments with a value no less than 0.1% and less than 2.5% of the total equity
3. New debt guarantee (excluding extension of period) or collateral issuance with a value no less than 0.1% and less than 2.5% of the total equity
 - A. Collateral: Only in the case of providing collateral for others
 - B. Guarantee: Excludes performance guarantee (eg, bid, contract, defect, difference guarantee) and tax payment guarantee
4. New credit agreement contract (excluding extension of period) with a value no less than 0.1% and less than 5% of the total equity
5. Approval of related party transactions:
Related party transactions with affiliates involving cash (loans and payments), equity (stocks and bonds) or assets (such as real estate and intangible property rights) with a value between KRW 3 billion and/or less than KRW 5 billion, as defined in the Monopoly Regulation and Fair Trade Act
※ Excluding cases where existing contracts are renewed without significant change.
6. Issuance of corporate bonds
7. Acquisition and disposal of real estate with a value of over 0.1% of the total equity, provided that the transaction is with a third party
8. Any matters that the CEO deems necessary and important for the business (eg, capex)

(C) All other matters except for those delegated to the Board and other committees in accordance with Board regulations

(Related Party Transactions Committee)

- Responsibilities: Improve management transparency through the establishment of a voluntary compliance system

- Authorities:

1. Right to receive reports on related party transactions:
The Committee can request reports on related party transactions with affiliates
※ According to the Monopoly Regulation and Fair Trade Act, the Related Party Transactions committee is permitted to conduct preliminary reviews and approves on related party transactions over KRW 5 billion and other transactions that are deemed as significant
2. Right to order ex officio investigation of related party transactions
3. Right to propose corrective measures for related party transactions

(Compensation Committee)

- Responsibilities: Provide transparent and objective decision making process related to remuneration of directors

- Authorities:

1. Propose remuneration limit of directors at AGM
2. Establish the director remuneration system
3. Other matters delegated by the Board

(Governance Committee)

- Responsibilities: Fulfill corporate social responsibility and enhance shareholder value

- Authorities:

1. Matters related to corporate social responsibility
2. Matters related to shareholder value enhancement
 - Preliminary review on shareholder return policies
 - Activities for improving shareholders' rights and interests
 - Other important management matters that can significantly impact shareholder value
3. Establishment, composition, operation of organizations under the committee including research groups, councils, etc.
4. Other matters delegated by the Board

(2) Committee Activities

□ The Management Committee (2020)

Date	Agenda	Voting results	Director (attendance)				
			Ki-nam Kim (100%)	Hyun-suk Kim (100%)	Dong-jin Koh (100%)	Jong-Hee Han (100%)	Yoon-Ho Choi (100%)
Jan 13	① Licensing agreement	Approved	For	For	For	N/A (newly appointed)	N/A (newly appointed)
Jan 30	① Investment in memory business	Approved	For	For	For		
Mar 6	① Investment in foundry business (5-nano)	Approved	For	For	For		
	② Investment in foundry business (CIS)	Approved	For	For	For		
Apr 3	① Investment in memory business	Approved	For	For	For	For	For
	② Liquidation of overseas subsidiary	Approved	For	For	For	For	For
May 8	① Investment in foundry business	Approved	For	For	For	For	For
May 27	① Investment in memory business	Approved	For	For	For	For	For

□ The Related Party Transactions Committee (2020)

Date	Agenda	Voting Results	Directors (attendance)		
			Sun-uk Kim (100%)	Jae-wan Bahk (100%)	Han-jo Kim (100%)
Jan 30	① Report on 4Q19 related party transactions	-	-	-	-
Mar 16	① Prior review on large-scale related party transactions	-	-	-	-
	1) Application for product liability insurance				
Apr 27	1. Prior review on large-scale related party transactions	-	-	-	-
	① Lease contract of office space in Seocho				
	② Charitable contribution				
May 25	③ Lease contract with Samsung SDI				
	2. Report on 1Q20 related party transactions	-	-	-	-
May 25	1. Prior review on large-scale related party transactions	-	-	-	-
	① Package insurance policy for domestic operations				

□ **The Compensation Committee (2020)**

Date	Agenda	Voting Results	Directors (attendance)		
			Byung-gook Park (100%)	Jae-wan Bahk (100%)	Jeong Kim (100%)
Feb 20	① Appointment of head of the Committee	Approved	For	For	For
	② Review of fixed annual income for each executive Directors in 2020	Approved	For	For	For
	③ Review on 2020 remuneration limit for Directors	Approved	For	For	For

□ **The Governance Committee (2020)**

Date	Agenda	Voting Results	Directors (attendance)					
			Jae-wan Bahk (100%)	Sun-uk Kim (100%)	Byung-gook Park (100%)	Jeong Kim (100%)	Curie Ahn (100%)	Han-jo Kim (100%)
Jan 30	※ Reporting Item ① Reporting on current status of IR	-	-	-	-	-	-	-
Feb 20	※ Items reviewed ① Review of Board Chairman appointment	-	-	-	-	-	-	-
Apr 29	※ Reporting Item ① Reporting on current status of IR ② Report on plans for publishing Sustainability Report	-	-	-	-	-	-	-

D. Director independence

(1) Appointment of Directors

The Board nominates Executive Director candidates and the Independent Director Recommendation Committee nominates Independent Director candidates. Directors are then appointed at the general meeting.

A candidate for Director needs to meet the requirements of relevant laws and the Articles of Incorporation. Executive Directors are appointed based on his or her expertise and leadership among a list of candidates that is constantly updated. Independent Directors should have no material interests with the Company and its major shareholder, possess knowledge and experience in IT, accounting, finance, law, economics, EHS, etc., and be able to fulfill the roles and responsibilities of supervising management from an independent position. The company has not set separate standards with respect to the independence of Directors besides the requirements in relevant laws and the Article of Incorporation.

Please refer to 『VIII. Executives and Employees』 for more information about the career of each Director.

The Board submits shareholders' proposal for appointment of Directors at the general shareholder meeting as a separate agenda if the proposal satisfies related laws and regulations.

The composition of the Board of Directors, as appointed by shareholders, is as follows:

[As of Jun 30, 2020]

Position	Name	Term	Reasons for appointment	Nominator	Responsibility	Relationship with the Company's major shareholders
Executive Director (CEO)	Ki-nam Kim	Mar 2018– Mar 2021	Director Ki-nam Kim has built expertise based on his experience as the president of Samsung Advanced Institute of Technology, head of the memory business, and president of the semiconductor business. He will play a critical role in solidifying leadership of the component business despite growing external uncertainty.	The Board	Head of DS Division	Related party
Executive Director (CEO)	Hyun-suk Kim	Mar 2018– Mar 2021	Director Hyun-suk Kim is an expert in display R&D and played a crucial role in positioning the company as the leader in the global TV market. He will use this successful experience in other businesses such as the home appliance business to create synergies within the CE division.	The Board	Head of CE Division	Related party
Executive Director (CEO)	Dong-jin Koh	Mar 2018– Mar 2021	Director Dong-jin Koh is an expert in mobile R&D and has contributed in advancing our mobile business with the galaxy lineup. He will play a critical role in becoming a first mover in the stagnant yet competitive smartphone market.	The Board	Head of IM Division	Related party

Position	Name	Term	Reasons for appointment	Nominator	Responsibility	Relationship with the Company's major shareholders
Executive Director	Jong-hee Han	Mar 2020–Mar 2023	Director Jong-hee Han is an expert in display R&D and played a leading role in achieving the top position in global TV market for 14 consecutive years. He will contribute to further solidifying leadership in TV market amid intensifying competition by using his excellent business capabilities.	The Board	Head of Visual Display Business	Related party
Executive Director	Yoon-ho Choi	Mar 2020–Mar 2023	Director Yoon-ho Choi is a finance expert and contributed to enhancing synergy among businesses in SEC. He will contribute to efficient and stable management of the Company by capitalizing on his capabilities in risk management amid uncertain global economy.	The Board	General management	Related party
Independent Director	Jae-wan Bahk	Mar 2016–Mar 2022 (second term)	Director Jae-wan Bahk is an expert in finance and public sector with abundant experience relative to state affairs and policy design. He can contribute to objective supervision of the management and the Board's strategic decisions.	Independent Director Recommendation Committee	Chairman of the Board	None
Independent Director	Sun-uk Kim	Mar 2018–Mar 2021	Director Sun-uk Kim is a legal expert and has experience as a professor at a school of law and the Legislation Minister. She can present a new perspective to the Board based on objective and juridical reasoning.	Independent Director Recommendation Committee	Overall management	None
Independent Director	Byung-gook Park	Mar 2018–Mar 2021	Director Byung-gook Park is a professor at electrical engineering and an expert in flash memory. He will play a crucial role in strengthening expertise of the Board.	Independent Director Recommendation Committee	Overall management	None
Independent Director	Jeong Kim	Mar 2018–Mar 2021	Director Jeong Kim is an IT expert and an entrepreneur. He will contribute to the Board's strategic decisions by utilizing his expertise, wide network, and business capability.	Independent Director Recommendation Committee	Overall management	None
Independent Director	Curie Ahn	Mar 2019–Mar 2022	Director Curie Ahn is a medical expert who has been working for the marginalized and public good. Director Ahn will help address the increasingly important EHS issues, improving social communication and achieving sustainable growth.	Independent Director Recommendation Committee	Overall management	None

Position	Name	Term	Reasons for appointment	Nominator	Responsibility	Relationship with the Company's major shareholders
Independent Director	Han-jo Kim	Mar 2019– Mar 2022	Director Han-jo Kim has built expertise in finance and business management through his experience as a President of Korea Exchange Bank and now serves as the chairman of a social contribution foundation. He will contribute to the Company by providing valuable insight on overall business issues and by utilizing expertise in finance, co-growth, etc.	Independent Director Recommendation Committee	Overall management	None

Feb 14, 2020: Sang-hoon Lee resigned from his position of Executive Director.

Feb 21, 2020: Independent Director Jae-wan Bahk was appointed as the Chairman of the Board.

Mar 18, 2020: Jong-hee Han and Yoon-ho Choi were newly appointed as Executive Directors at the AGM.

Relationship with Company's major shareholder is in accordance with Article 542-8 of the Commercial Act.

(2) Independent Director Recommendation Committee

The Independent Director Recommendation Committee assesses the independence and ability of potential candidates and recommends selected candidates to be appointed at the annual general meeting of shareholders. As of the reporting date (June 30, 2020), the committee is composed of three Independent Directors (Jeong Kim, Byung-gook Park, and Curie Ahn) based on related laws that states more than a majority of members should be independent directors in accordance with clause 4 of Article 542-8 of the Commercial Law.

Date	Agenda	Voting Results	Directors (attendance)		
			Jeong Kim (N/A)	Byung-gook Park (N/A)	Curie Ahn (N/A)
-	-	-	-	-	-

(3) Expertise of Independent Directors

1) Support team for Independent Directors

[As of Jun 30, 2020]

Team	Number of Employees	Position (Total years served/ years in the support team)	Key activities
HR	5	Executive Vice President: 1 person (29 years and 7 months / 1 year and 6 months) Vice President: 1 person (26 years and 4 month / 5 months) Principal Professional: 1 person (17 years and 5 months / 11 months) Senior Professional: 2 persons (average: 12 years and 5 months / 4 years and 5 months)	<ul style="list-style-type: none"> Support operation of annual shareholders' meeting, Board meetings, and Committee meetings Support education for Independent Directors and their activities Establish database on Director candidates Provide information for resolution process to each Directors Administrative work for meetings Record meeting agendas for the Board and committee meetings

2) Education programs to provide updates on key management issues for Independent Directors

① Inspection of domestic and overseas business sites

Date	Organizer	Participants	Reasons for absence	Education contents
Jan 2018	HR team and management team of the region where the inspection takes place	In-ho Lee, Han-joong Kim, Kwang-soo Song, Byeong-gi Lee, Jae-wan Bahk	N/A	On-site inspection to check business operations
Aug 2018	HR team and management team of the region where the inspection takes place	In-ho Lee, Kwang-soo Song, Sun-uk Kim, Jae-wan Bahk, Byung-gook Park, Jeong Kim	N/A	On-site inspection to check business operations
Aug 2019	HR team and management team of the region where the inspection takes place	Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim	N/A	On-site inspection to check business operations

② Orientation for newly appointed Independent Directors

Date	Organizer	Participants	Reasons for absence	Education contents
Mar 2018	HR team	Sun-uk Kim, Byung-gook Park, Jeong Kim	N/A	Key issues regarding Board activities and management
Apr 2018	HR team and relevant management team	Sun-uk Kim, Byung-gook Park, Jeong Kim	N/A	Key issues regarding Board activities and management
Mar 2019	HR team	Curie Ahn, Han-jo Kim	N/A	Key issues regarding Board activities and management
Apr 2019	HR team and relevant management team	Curie Ahn, Han-jo Kim	N/A	Key issues regarding Board activities and management
Jul 2019	HR team and relevant management team	Curie Ahn, Han-jo Kim	N/A	Key issues regarding Board activities and management

③ Orientation for Independent Directors

Date	Organizer	Participants	Reasons for absence	Education contents
Jan 2019	Support Team	In-ho Lee, Kwang-soo Song, Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim	N/A	Business plans for 2019
Jan 2019	Network business	In-ho Lee, Kwang-soo Song, Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim	N/A	Briefing on 5G technology and tour of production lines

2. Audit System

A. Profiles of Audit Committee members

As of June 30, 2020, SEC operates an Audit Committee consisting of three Independent Directors. Directors Jae-wan Bahk (head) and Han-jo Kim qualify as experts in finance in accordance with relevant regulations.

Name	Major experience	Accounting/financial expertise ¹⁾	
		Classification	Relevant experience
Jae-wan Bahk (Head)	<ul style="list-style-type: none"> • 2020–present: Professor Emeritus, Department of Public Administration Graduate School of Governance at Sungkyunkwan University • 1996–2020: Professor, Department of Public Administration & Graduate School of Governance, Sungkyunkwan University • 2016–present: Independent Director, Lotte Shopping • 2014–present: Chief Director, Hansun Foundation • 2011–2013: Minister of Strategy and Finance • 2010–2011: Minister of Employment and Labor • 2004–2008: Member of the 17th National Assembly 	Type 2 ²⁾	<ul style="list-style-type: none"> • 1996–2020: Professor of Public Administration, Sungkyunkwan University • 1992: Gained Ph.D. in Financial Administration
Sun-uk Kim	<ul style="list-style-type: none"> • 2018–present: Professor Emeritus, School of Law, Ewha Womans University • 1995–2018: Professor, Ewha Law School, Ewha Womans University • 2010–2014: President, Ewha Womans University • 2005–2007: Minister of Government Legislation 	–	–
Han-jo Kim	<ul style="list-style-type: none"> • 2019–present: CEO/Rep Director, Hana Foundation • 2015–2019: CEO/Rep Director, Hana Nanum Foundation • 2015–2016: Vice Chairman, Hana Financial Group • 2014–2015: President, Korea Exchange Bank • 2013–2014: President, KEB Capital Inc. 	Type 4 ³⁾	<ul style="list-style-type: none"> • 2015–2016: Vice Chairman, Hana Financial Group • 2014–2015: President, Korea Exchange Bank • 2013–2014: President, KEB Capital • 2012–2013: Head of Corporate Business Group, Korea Exchange Bank • 1999–2002, 2004–2005: Head of Branch, Korea Exchange Bank

¹⁾ Defined in Public Disclosure Guideline and Article 37-2 of the Enforcement Decree of the Commercial Act

²⁾ Holds at least a master's degree in accounting or finance and who has worked for a research institute or university at least as a researcher or an assistant professor in accounting or finance for an aggregate of at least five years

³⁾ Experience at financial, government, securities-related organizations in charge of accounting or finance or in charge of supervision over accounting or finance for an aggregate of at least five years

B. Audit Committee independence

Pursuant to related laws and the Articles of Incorporation, SEC has prepared internal audit regulations which encompass composition, operation, authority, and responsibility of the Audit Committees to carry out audit related activities.

The Audit Committee is exclusively composed of Independent Directors recommended by the Board and appointed at the general shareholder meeting. Currently, it includes financial experts Jae-wan Bahk (head) and Han-jo Kim and legal expert Sun-uk Kim. Committee members do not have any relation to the Company's major shareholder that may undermine the independence of the Committee. Also, the Audit Committee satisfies requirements of relevant laws (eg, the stipulation that the role of head of the committee be held by an Independent Director).

Requirements	Requirement status	Applicable acts, etc.
- The audit committee shall consist of at least three directors.	Satisfied (the committee consists of three Directors)	Article 415-2 (2) of the Commercial Act, Article 2 of the Company's Audit Committee Regulation
- The ratio of independent directors shall exceed two thirds of the total number of members.	Satisfied (all members are independent directors)	
- At least one member of the committee shall be an accounting or financing expert.	Satisfied (Jae-wan Bahk, Han-jo Kim)	Article 542-11 (2) of the Commercial Act, Article 3 of the Company's Audit Committee Regulation
- The representative of the committee shall be an independent director.	Satisfied (Independent Director Jae-wan Bahk)	
- Other conditions (related party of the major shareholder, etc.)	Satisfied (n/a)	Article 542-11 (3) of the Commercial Act

[As of Jun 30, 2020]

Name	Term	Reasons for appointment	Nominator	Relationship with the Company	Relationship with the Company's largest/major shareholders	Concurrent positions
Jae-wan Bahk (Head)	Mar 2019– Mar 2022	Expertise in finance and public sector and abundant experience in state affairs and policy design. He can contribute to the committee's activities by offering an objective perspective.	Independent Director Recommendation Committee	N/A	N/A	Independent Director Lotte Shopping, Co., Ltd 2016~
Sun-uk Kim	Mar 2018– Mar 2021	Based on the legal expertise and experience running organizations in areas including administration, finance, international affairs, etc., she can carry out the duties in an aboveboard manner with strict standards.	Independent Director Recommendation Committee	N/A	N/A	-
Han-jo Kim	Mar 2019– Mar 2022	An expert in finance with broad experience, he offers impartial judgement on overall management activities while carrying out his duties	Independent Director Recommendation Committee	N/A	N/A	-

Relationship with the Company and Company's major shareholder is in accordance with Article 542-8 of the Commercial Act.

The Audit Committee reviews accounting documents including financial statements and audit process related documents presented by the external auditor, and if needed, requests the external auditor to perform additional reviews on accounting books and records. To ensure the reliability of accounting related disclosures, the audit committee receives and reviews a report on internal accounting control systems prepared by internal accounting managers. In addition, the Committee attends the Board meetings and other significant meetings. The Committee receives reports on deliberations of the Management Committee and on business performance from Directors and requests additional reviews and supplementation of data as needed.

C. Major activities of the Audit Committee (2020)

Date	Agenda	Voting Results	Directors (attendance)		
			Jae-wan Bahk (100%)	Sun-uk Kim (100%)	Han-jo Kim (100%)
Jan 28	- Report on 2019 internal accounting management system activities	-	-	-	-
	- Report on evaluation of 2019 internal accounting management system activities	-	-	-	-
	- Report on audit activities by external auditor	-	-	-	-
	- Report on 2019 financial statement and business report	-	-	-	-
	- Report on 4Q19 non-audit activities	-	-	-	-
	- Report on 4Q19 external contributions	-	-	-	-
	- Report on 2019 audit activities	-	-	-	-
Feb 20	- Review of the 2019 AGM agenda	-	-	-	-
	- Report on activities of internal compliance system in 2019	-	-	-	-
Apr 27	- Communication between external auditor and audit committee	-	-	-	-
	- Report on 1Q20 report	-	-	-	-
	- Report on 1Q20 non-audit activities	-	-	-	-
	- Report on plans for reviewing 2020 internal accounting management system activities	-	-	-	-
	- Report on 1Q20 external contributions	-	-	-	-
	- Report on plans for evaluating 2020 internal accounting management system activities	-	-	-	-

D. Education programs for the Audit Committee

In accordance with the working guide for internal accounting management system, we are conducting additional training to ensure the expertise of the Audit Committee. Organized by external experts, finance team, and audit team, education on changes to internal control, internal accounting management system is provided more than once a year.

E. Previous education sessions

Date	Organizer	Participants	Reasons for absence	Education contents
Apr 29, 2019	Audit team Finance team HR team External experts	Jae-wan Bahk Sun-uk Kim Han-jo Kim	N/A	Introduction materials
Jul 30, 2019	External experts	Jae-wan Bahk Sun-uk Kim Han-jo Kim	N/A	Internal accounting management system

On July 28, 2020, education session on internal accounting management system for all audit committee members was provided by an external expert.

F. Support team for the Audit Committee

[As of Jun 30, 2020]

Team	Composition	Service years on team	Major tasks
Audit team	1 Senior Vice President, 3 Senior Professionals	Senior Vice President: 6 months Senior Professionals: 1 year and 11 months (average)	Support the Audit Committee
Internal accounting assessment support group	1 Vice President, 1 Lawyer, 1 Senior Professional	Vice President: 1 year and 6 months Lawyer: 1 year and 6 months Senior Professional: 1 year and 6 months	Support assessment of the internal accounting management system

G. Compliance Officer

[As of Jun 30, 2020]

1. Personal information and major career	Name	Duk-ho Ahn
	Date of birth	July 1968
	Sex	Male
	Current position	Corporate Compliance Team leader at Samsung Electronics (Jan 2020–present)
	Career	- Jan 2020: Head of Compliance Team, SEC (Executive Vice President) - Nov 2017: Head of Legal Support Team, SEC DS Division (Executive Vice President) - Apr 2017: Head of Legal Support Team, SEC DS Division (Senior Vice President) - Dec 2010: Office of Compliance Management, SEC (Senior Vice President) - Mar 2006: Office of Legal Affairs, SEC (Vice President) - Mar 2005: Office of Legal Affairs, Samsung Restructuring Head Office (Vice President) - 1997–2005: Judge at the Seoul District Court, Seoul Administration Court
	Academic background	Bachelor's Degree in Law (Seoul National University)
2. Date of Board resolution		Jan 30, 2020
3. Disqualifications		N/A
4. Others		N/A

Compliance officer meets the eligibility requirement (lawyer) stated in Article 542-13 (5) of the Commercial Act.

H. Major compliance activities

The Company conducts compliance assessments on a regular and ad-hoc basis and reflects the results in the Company's business activities to improve compliance of the Company and its employees.

Date	Assessment subject	Assessment area	Results
Mar 2020	Violation of customers' business secrets	Business secret	Overall result was satisfactory. Internal policies were followed in areas where there was room for improvement.
	Compliance of domestic marketing organizations	Fair trade	
	Compliance of overseas 3rd party production customers	Technology leak, product liability, etc.	
May 2020	Compliance of domestic marketing organizations	Fair trade, business secret, etc.	
	Compliance of waste management process	Environment & safety	
Jun 2020	Compliance of patent application process	Technology misuse, business secret, etc.	
	Voluntary compliance of overseas subsidiaries	Status of compliance program	
	Compliance of domestic and overseas third-party production customers	Technology leak, product liability, etc.	

Assessment conducted in the final month of each quarter.
Each assessment was conducted on selected organizations.

I. Support team for the Compliance Officer

[As of Jun 30, 2020]

Team	Composition	Service years (average)	Major tasks
Compliance team, etc.	2 Vice Presidents 10 Principal professionals 14 Lawyers 27 Senior Professionals 7 Professionals (Total: 60)	Vice Presidents (5 years and 11 months) Principal professionals (7 years and 4 months) Lawyers (3 years and 2 months) Senior Professionals (4 years and 2 months) Professionals (2 years and 3 months)	Supports activities of the Compliance Officer

Service years refer to time performing work relevant to support activity.

3. Voting rights of shareholders

A. Voting method

On January 30, 2020, the Board resolved to adopt electronic voting to enhance convenience in exercising voting rights for shareholders in accordance with Article 368-4 (Exercise of Voting Rights by Electronic Means) of the Commercial Act. E-voting was first introduced at the 51st AGM, held on March 18, 2020.

The convocation notice of general meeting of shareholders includes the information that voting rights can be exercised electronically. Owners of shares as of the last day of every settlement term can exercise their voting rights via the electronic voting system of Korea Securities Depository ten days prior to general meeting date until the day before the meeting, without being present at the meeting.

The Company has yet to adopt a cumulative voting system and paper voting.

B. Minority shareholder rights

No minority shareholder rights were exercised during the reporting period.

C. Competition over management rights

No competition over management rights occurred during the reporting period.

VII. Information on Shareholders

1. Ownership of shares by the major shareholder and related parties

[As of Jun 30, 2020]

Name	Relationship ¹⁾	Type of share	Ownership				Notes
			Period start		Period end		
			Shares	Stake (%)	Shares	Stake (%)	
Kun-hee Lee	Major shareholder	Common	249,273,200	4.18	249,273,200	4.18	-
Kun-hee Lee	Major shareholder	Preferred	619,900	0.08	619,900	0.08	-
Samsung C&T	Affiliate	Common	298,818,100	5.01	298,818,100	5.01	-
Samsung Welfare Foundation	Funded foundation	Common	4,484,150	0.08	4,484,150	0.08	-
Samsung Foundation Of Culture	Funded foundation	Common	1,880,750	0.03	1,880,750	0.03	-
Ra-hee Hong	Spouse of the major shareholder	Common	54,153,600	0.91	54,153,600	0.91	-
Jae-yong Lee	Son of the major shareholder	Common	42,020,150	0.70	42,020,150	0.70	-
Samsung Life Insurance	Affiliate	Common	508,157,148	8.51	508,157,148	8.51	-
Samsung Life Insurance	Affiliate	Preferred	43,950	0.01	43,950	0.01	-
Samsung Life Insurance (special accounts)	Affiliate	Common	18,286,593	0.31	17,740,224	0.30	Open market transactions
Samsung Life Insurance (special accounts)	Affiliate	Preferred	1,352,563	0.16	628,513	0.08	Open market transactions
Samsung Fire & Marine Insurance	Affiliate	Common	88,802,052	1.49	88,802,052	1.49	-
Ki-nam Kim	Executive member	Common	200,000	0.00	200,000	0.00	Open market transactions
Hyun-suk Kim	Executive member	Common	99,750	0.00	99,750	0.00	-
Dong-jin Koh	Executive member	Common	75,000	0.00	75,000	0.00	Open market transactions
Jong-hee Han	Executive member	Common	0	0.00	5,000	0.00	Newly appointed
Curie Ahn	Executive member	Common	800	0.00	1,500	0.00	Open market transactions
Han-jo Kim	Executive member	Common	2,175	0.00	2,175	0.00	Open market transactions
Sang-hoon Lee	Executive member	Common	16,000	0.00	0	0.00	Resigned from Director position
Total		Common	1,266,269,468	21.21	1,265,712,799	21.20	-
		Preferred	2,016,413	0.25	1,292,363	0.16	-

Common shares carry full voting rights while preferred shares do not (owners of certain common shares have limited voting rights in accordance with relevant laws. For information on voting rights, please refer to 『I. Corporate Overview-5. Voting Shares』).

¹⁾ In accordance with Article 3 Paragraph 1 of Enforcement Decree of the Act on Corporate Governance of Financial Companies.

2. Matters related to major shareholder

[The major shareholder]

- 1) Name: Kun-hee Lee
- 2) Career (recent 5 years): Chairman of Samsung Electronics (March 2010–present)
Honorary member of the International Olympic Committee (2017–present)
Member of the International Olympic Committee (1996–2017)
- 3) The major shareholder of record has not changed during the reporting period.

3. Ownership of shares

A. Share ownership status

[As of Jun 30, 2020]

Classification	Name	Number of shares owned	Share ratio	Note
Shareholders with over 5% voting shares ¹⁾	National Pension Service	662,860,071	11.10%	-
	Samsung Life Insurance	525,897,372	8.81%	-
	BlackRock Fund Advisors	300,391,061	5.03%	Based on the Report on Mass Holding of Securities (disclosed on February 7, 2019)
	Samsung C&T	298,818,100	5.01%	-
Employee Stock Ownership Association		-	-	-

BlackRock Fund Advisors information as of January 28, 2019.

The number of shares owned and share ratio of Samsung Life Insurance includes special accounts.

¹⁾ Including shares with limited voting rights in accordance with relevant laws. For more information, please refer to 『I. Corporate Overview-5. Voting Shares』

B. Minority Shareholders

[As of Jun 30, 2020]

Classification	Shareholder			Shares owned ¹⁾			Note
	Number of shareholders	Total shareholders	Portion	Number of shares	Total number of shares	Portion	
Minority shareholder	1,454,373	1,454,482	99.99%	3,689,627,649	5,969,782,550	61.81%	-

Shareholders with shares less than 1/100 of total issued stocks

¹⁾ Number of voting shares, including those with limited voting rights in accordance with relevant laws.

4. Stock affairs

Preemptive Rights in the Articles of Incorporation

1. New shares to be issued by the Company shall be allocated to the shareholders in proportion to their respective shareholdings in accordance with Paragraph 6, Article 8. If shares are not subscribed for as a result of waiver or loss of the preemptive right of the shareholders to subscribe for new shares, or if fractional shares remain at the time of allocation of new shares, such shares may be disposed of by a resolution of the Board of Directors in accordance with applicable laws and regulations.
2. Notwithstanding the above Paragraph 1, new shares may be allocated to persons other than shareholders in the following cases:
 - a. If the Company issues new shares or causes underwriters to underwrite new shares by a resolution of the Board of Directors in accordance with applicable laws and regulations including the Financial Investment Services and Capital Markets Act;
 - b. If the Company allocates new shares preferentially to members of the Employee Stock Ownership Association by a resolution of the Board of Directors in accordance with applicable laws and regulations including the Financial Investment Services and Capital Markets Act;
 - c. If the Company issues new shares for the issuance of depositary receipts (DR) by a resolution of the Board of Directors in accordance with the applicable laws and regulations including the Financial Investment Services and Capital Markets Act;
 - d. If the Company issues new shares by public offering in accordance with Article 11-3;
 - e. If new shares are issued by the exercise of stock options in accordance with Article 11-4;
 - f. If the Company issues new shares to the extent of 20% of the total issued and outstanding shares to domestic or foreign financial institutions for the purpose of obtaining financing urgently or to the relevant partner company for the purpose of inducing technology therefrom, etc., by a resolution of the Board of Directors; provided that the issue price of the new shares shall not be less than the price prescribed by the Financial Investment Services and Capital Markets Act and other applicable laws and regulations.

(Note) Paragraph 6, Article 8

In the case of rights issue, bonus issue or stock dividend, the holders of common shares shall be entitled to common shares, and the holders of preferred shares shall be entitled to preferred shares, in proportion to their respective shareholdings; provided that in the case of rights issue and stock dividend the Company may, if necessary, issue only one kind of shares, where all the shareholders shall be entitled to such kind of shares to be issued.

(Note) Article 11-3 (Public Offering)

1. The Company may issue new shares by public offering to the extent that the new shares do not exceed 20% of the total number of issued and outstanding shares by a resolution of the Board of Directors, pursuant to Article 165-6, Paragraph 1, Item 3 of the Financial Investment Services and Capital Markets Act.
2. If the Company issues new shares by public offering, the type, quantity and issue price of the shares to be newly issued shall be determined by a resolution of the Board of Directors; provided that the issue price of such new shares shall not be less than the price prescribed by the Financial Investment Services and Capital Markets Act and other applicable laws and regulations.

(Note) Article 11-4 (Stock Options)

1. The Company may grant stock options to its officers and employees (including officers and employees of the related companies as set forth in Article 542-3, Paragraph 1 of the Commercial Code; the same shall apply for the purpose of this Article) by a special resolution of the general meeting of shareholders pursuant to Article 542-3 of the Commercial Code, to the extent permitted by the Commercial Code; provided, however, that the Company may grant the stock options to its officers and employees (except for the directors of the Company) by a resolution of the Board of Directors to the extent determined by the relevant laws and regulations.
2. The person to whom stock options may be granted are the officers and employees who have contributed or have the capacity to contribute to the establishment, management, overseas business, technical innovation, etc. of the Company; provided, however, that the officers and employees who may not be entitled to stock options under the relevant laws and regulations shall be excluded.
3. The shares to be issued to the officers or employees by the exercise of their stock options (in case the Company pays, either in cash or

treasury shares, the difference between the exercise price of stock options and the market price, they refer to the shares which are the basis for such calculation) shall be common shares in registered form or preferred shares in registered form.

4. Total number of shares to be delivered in accordance with the exercise of stock options shall be up to the extent permitted by the relevant laws and regulations.
5. The stock options may be exercised until an expiry date determined by a resolution of the general meeting of shareholders or the Board of Directors and such expiry date shall be determined within a period not exceeding eight (8) years from the date when two (2) years have elapsed from the date of the general meeting of shareholders or the date of the Board of Directors' meeting at which a resolution to grant such stock options is adopted; provided, however, that the person to whom a stock option is granted should serve the Company for at least two (2) years after the date of such resolution in order to exercise such stock option, unless otherwise set forth by relevant laws and regulations.
6. The terms and conditions for stock options, such as the contents and exercise price thereof shall be determined by a special resolution of the general meeting of shareholders or by a resolution of the Board of Directors in accordance with the relevant laws and regulations and the Articles of Incorporation; provided, however, that such matters which are not provided for as matters reserved for resolutions of the general meeting of shareholders or the Board of Directors' meeting under the relevant laws and regulations or the Articles of Incorporation may be determined by the Board of Directors or a committee authorized by the Board of Directors.
7. The Company may cancel the grant of stock options by a resolution of the Board of Directors in any of the following cases:
 - a. In case the relevant officer or employee voluntarily retires from his/her office or leaves the Company after the grant of stock options;
 - b. In case the relevant officer or employee causes substantial damages to the Company due to his/her willful misconduct or negligence;
 - c. In case any of the causes for cancellation set forth in the stock option agreement occurs.

Settlement date	Dec 31	Annual General Meetings of Shareholders	Within 3 months after the end of every business year
Shareholder register closing period			One month from Jan 1
Stock type	-		
Transfer agent	Korea Securities Depository (T: +82-2-3774-3000): 23, Yeouinaru-ro 4-gil, Yeongdeungpo-gu, Seoul, Korea		
Shareholder benefit	n/a	Published on	Joongang Daily

With Act on Electronic Registration of Stocks, Bonds, etc. ("Electronic Securities Act") taking effect Sep 16, 2019, rights specified on stocks and subscription warrants are subject to mandatory electronic registration, therefore, "Stock types" are no longer applicable.

5. Stock price and stock transactions

A. Domestic stock market

Type		Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	
Common stock	Stock price	High	62,400	61,800	57,800	51,400	50,700	55,500
		Low	55,200	54,200	42,500	45,800	47,850	49,900
		Average	58,815	59,085	50,168	49,045	49,100	52,986
	Volume	High (day)	24,102,579	30,054,227	59,462,933	32,041,675	31,309,318	49,257,814
		Low (day)	10,009,778	8,740,596	18,716,656	14,049,471	13,884,411	13,801,350
		Month	319,891,636	360,007,160	856,741,868	424,101,937	374,264,673	517,439,261
Preferred stock	Stock price	High	52,200	52,700	49,050	44,050	43,500	48,000
		Low	45,600	45,550	35,450	39,000	40,650	43,950
		Average	48,773	50,150	42,252	41,958	42,134	46,366
	Volume	High (day)	3,776,068	3,872,934	5,812,655	3,207,970	3,546,245	4,824,403
		Low (day)	1,212,706	1,875,311	2,588,823	969,434	1,090,117	1,436,184
		Month	49,955,200	50,875,858	88,480,559	36,541,914	38,727,541	59,384,055

Stock price is based on the closing exchange rate of the applicable trading day.

B. Overseas stock market

□ Name of stock exchange: London Stock Exchange (common stock)

Type			Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	
Common stock	Price	High	USD	1,339.00	1,302.00	1,201.00	1,050.00	1,046.00	1,171.00
			KRW	1,551,633	1,540,917	1,430,871	1,288,875	1,280,827	1,425,575
		Low	USD	1,172.00	1,116.00	851.00	925.00	969.00	1,043.00
			KRW	1,387,062	1,356,944	1,067,239	1,128,500	1,189,835	1,290,817
		Average	USD	1,259.59	1,234.05	1,022.93	1,008.25	1,001.74	1,098.95
			KRW	1,465,055	1,471,434	1,248,894	1,235,960	1,230,776	1,328,892
	Volume ¹⁾	High (day)	30,606	39,819	78,342	38,689	47,225	40,591	
		Low (day)	4,629	5,600	18,840	13,382	6,670	8,477	
		Month	364,554	370,318	834,884	468,760	477,239	520,499	

Stock price in KRW is based on the closing exchange rate of the applicable trading day.

High and low price in KRW are based on the KRW/USD closing exchange rate of the applicable trading day; average price in KRW is based on monthly average KRW/USD exchange rate.

Conversion ratio between GDRs and original shares is 1:25.

¹⁾Number of shares.

□ Name of stock exchange: Luxembourg Stock Exchange (preferred stock)

Type			Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	
Preferred stock	Price	High	USD	1,112.00	1,108.00	1,016.00	899.00	892.00	1,006.00
			KRW	1,288,586	1,309,102	1,210,462	1,103,523	1,092,254	1,224,704
		Low	USD	972.00	945.00	713.00	784.00	821.00	886.00
			KRW	1,150,362	1,149,026	894,173	956,480	1,006,792	1,096,514
		Average	USD	1,040.95	1,044.30	864.55	860.45	853.53	959.23
			KRW	1,210,754	1,245,184	1,055,521	1,054,780	1,048,678	1,159,930
	Volume ¹⁾	High (day)	6,096	6,983	4,661	5,492	6,750	9,860	
		Low (day)	433	480	668	385	606	371	
		Month	49,889	46,463	61,703	43,018	52,564	54,154	

Stock price in KRW is based on the closing exchange rate of the applicable trading day.

High and low price in KRW are based on the KRW/USD closing exchange rate of the applicable trading day; average price in KRW is based on monthly average KRW/USD exchange rate.

Conversion ratio between GDRs and original shares is 1:25.

¹⁾ Number of shares.

VIII. Executives and Employees

1. Executives and employees

A. Registered Executives

[As of Jun 30, 2020]

(Shares)

Name	Gender	Date of birth	Position	Registered Executive	Full/part-time	Responsibility	Major career	Number of shares owned		Relationship with the major shareholder ¹⁾	Length of service (months)	Term expiration
								Common	Preferred			
Ki-nam Kim	M	Apr 1958	CEO	Yes	Full	Head of DS Division	- Doctor's degree in Electrical Engineering from UCLA - Head of DS Division	200,000	-	Executive member	28	Mar 22, 2021
Hyun-suk Kim	M	Jan 1961	CEO	Yes	Full	Head of CE Division	- Master's degree in Electrical Engineering from Portland State University - Head of CE Division	99,750	-	Executive member	28	Mar 22, 2021
Dong-jin Koh	M	Mar 1961	CEO	Yes	Full	Head of IM Division	- Master's degree in Technology Policy from University of Sussex - Head of IM Division	75,000	-	Executive member	28	Mar 22, 2021
Jong-hee Han	M	Mar 1962	Executive Director	Yes	Full	Head of Visual Display Business	- Bachelor's degree in Electronic Engineering from Inha University - Head of Visual Display Business	5,000	-	Executive member	4	Mar 17, 2023
Yoon-ho Choi	M	Jan 1963	Executive Director	Yes	Full	Overall Management	- Bachelor's degree in Business Management from Sungkyunkwan University - Head of Corporate Management Office	-	-	Executive member	4	Mar 17, 2023
Jae-wan Bahk	M	Jan 1955	Independent Director	Yes	Part	Chairman of the Board	- Doctor's degree in Public Policy from Harvard University - Professor Emeritus of Graduate School of Public Administration at Sungkyunkwan University	-	-	Executive member	52	Mar 10, 2022
Sun-uk Kim	F	Dec 1952	Independent Director	Yes	Part	Overall management	- Doctor's degree in Administrative Law from University of Konstanz - Professor Emeritus at Ewha Womans University	-	-	Executive member	28	Mar 22, 2021
Byung-gook Park	M	Apr 1959	Independent Director	Yes	Part	Overall management	- Doctor's degree in Electrical Engineering from Stanford University - Professor of Electrical Engineering at Seoul National University	-	-	Executive member	28	Mar 22, 2021
Jeong Kim	M	Aug 1960	Independent Director	Yes	Part	Overall management	- Doctor's degree in Reliability Engineering from the University of Maryland - President of Kiswe Mobile	-	-	Executive member	28	Mar 22, 2021
Curie Ahn	F	Mar 1955	Independent Director	Yes	Part	Overall management	- Doctor's degree in Medicine from Seoul National University - Professor at the Division of Nephrology of Seoul National University	1,500	-	Executive member	16	Mar 19, 2022

Name	Gender	Date of birth	Position	Registered Executive	Full/part	Responsibility	Major career	Number of shares owned		Relationship with the	Length of service	Term expiration
Han-jo Kim	M	Jul 1956	Independent Director	Yes	Part	Overall management	- Bachelor's degree in French language and Literature from Yonsei University - Chairman of Hana Nanum Foundation	2,175	-	Executive member	16	Mar 19, 2022

Feb 14, 2020: Sang-hoon Lee resigned from his position of Executive Director.

Mar 18, 2020: Jong-hee Han and Yoon-ho Choi were appointed as Executive Directors at the AGM.

¹⁾ In accordance with Article 3 Paragraph 1 of Enforcement Decree Of The Act On Corporate Governance Of Financial Companies.

B. Registered Executives with concurrent positions

[As of Jun 30, 2020]

Concurrent office holder		Company		
Name	Position	Name of company	Position	Period
Jae-wan Bahk	Independent Director	Lotte Shopping Co., Ltd	Independent director	2016–present
Jeong Kim	Independent Director	Kiswe Mobile	President	2013–present

C. Employees

[As of Jun 30, 2020]

(KRW mil)

Division	Gender	Number of employees ¹⁾				Average length of service (years)	Total compensation (KRW mil)	Average compensation per employee ²⁾ (KRW mil)	Non-affiliated ³⁾		
		Regular	Contract-based	Others	Total				Male	Female	Total
CE	M	10,449	58	-	10,507	15.7	-	-	-	-	-
	F	2,202	16	-	2,218	10.7	-	-	-	-	-
IM	M	20,059	168	-	20,227	13.7	-	-	-	-	-
	F	7,302	26	-	7,328	11.5	-	-	-	-	-
DS	M	40,077	132	-	40,209	11.0	-	-	-	-	-
	F	15,801	12	-	15,813	11.0	-	-	-	-	-
Others	M	7,985	123	-	8,108	14.9	-	-	-	-	-
	F	2,199	43	-	2,242	11.1	-	-	-	-	-
Gender total	M	78,570	481	-	79,051	12.7	3,576,922	46	-	-	-
	F	27,504	97	-	27,601	11.2	871,837	34	-	-	-
Total		106,074	578	-	106,652	12.3	4,448,759	43	-	-	-

Calculated based on compensation paid between January and June 2020.

Total compensation and average compensation per employee were calculated before income tax and other deductions based on the earned income payment record submitted to the district tax office in accordance with Article 20 of the Income Tax Law.

¹⁾ Parent basis; represents employees of domestic headquarters in Korea, including employees on leave and excluding 11 registered executives (5 Executive Directors and 6 Independent Directors).

²⁾ Calculated based on average number of employees: 102,967 employees (male: 77,462, female: 25,505).

³⁾ Non-affiliated employees are not included in the interim or half-year business reports, as per Public Disclosure Guideline (to be included in annual business report)

D. Remuneration of non-registered Executives

[As of Jun 30, 2020]

(KRW mil)

Classification	Number of employees	Total compensation	Average compensation per employee	Note
Non-registered Executives	879	160,247	182	-

Calculated based on compensation paid between January and June 2020.

As per Public Disclosure Guideline, the number of employees and total annual salary is shown only for those who are active and the amount of compensation is calculated based on the earned income payment record submitted to the district tax office in accordance with Article 20 of the Income Tax Law.

A total of 167 non-registered executives were excluded as they did not earn domestic income (eg, expatriates).

2. Remuneration for directors

A. Summary on total remuneration

<Remuneration of directors and auditors>

(1) Remuneration approved at the annual general meetings of shareholders

(KRW mil)

	Number of persons ¹⁾	Amount approved at shareholders' meeting	Note
Registered Directors	5	-	-
Independent Directors	3	-	-
Audit Committee members or Auditor	3	-	-
Total	11	55,000	-

¹⁾As of the day of AGM, as approved on the occasion

(2) Remuneration Paid

[Remuneration paid for directors and auditors]

(KRW mil)

Number of persons ¹⁾	Total amount of remuneration ²⁾	Average remuneration per Director ³⁾	Note
11	4,366	397	-

Calculated based on compensation paid between January and June 2020.

There are no recognized expenses (compensation expenses) in this term from granting stock options.

Remuneration for registered executives is the total remuneration which includes remuneration they received as non-registered executives.

¹⁾ As of the reporting date.

²⁾ Based on the Income Tax Law that incumbent or retired registered directors, independent directors, and members of audit committee in the fiscal year received in accordance with Article 159 of the Financial Investment Services and Capital Markets Act and Article 168 of the enforcement decree of the same law.

³⁾ Average remuneration per person was calculated by dividing total remuneration by the number of persons as of the reporting date.

[Remuneration paid, by Director type]

(KRW mil)

	Number of persons ¹⁾	Total amount of remuneration ²⁾	Average remuneration per Director ³⁾
Registered Directors (excluding Independent Directors and Audit Committee members)	5	3,941	788
Independent Directors (excluding Audit Committee members)	3	276	92
Audit Committee members	3	149	50
Auditor	-	-	-

Calculated based on compensation paid between January and June 2020.

There are no recognized expenses (compensation expenses) in this term from granting stock options.

Remuneration for registered executives is the total remuneration which includes remuneration they received as non-registered executives.

¹⁾ As of the reporting date.

²⁾ The total amount is the income based on the Income Tax Law that incumbent or retired registered directors, independent directors, and members of audit committee in the fiscal year received in accordance with Article 159 of the Financial Investment Services and Capital Markets Act and Article 168 of the enforcement decree of the same law.

³⁾ Average remuneration per person was calculated by dividing total remuneration by the number of persons as of the reporting date.

(3) Criteria and methodology

Type	Criteria and methodology
Registered Directors (excluding Independent Directors and Audit Committee members)	<ul style="list-style-type: none"> • Salary: In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position, responsibilities, and performance results. • Traditional holiday bonus: 100% of monthly wage • Target achievement incentive: Paid biannual basis within the range of 0–200% of monthly wage, and CEO decides the amount according to the level of target achieved. (Adjusted according to division performance.) • Performance incentive: When performance exceeds the Company's goal; CEO decides the amount based on 20% profit. Paid once a year within 0–50% of salary. (Adjusted according to individual performance.) • Long-term incentive: Calculated within the director remuneration limit, based on the average salary of 3 years, using ROE, stock performance, and EBIT margin as criteria. Paid over the course of 3 years. • Fringe benefits: Medical services, checkups, group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
Independent Directors (excluding Audit Committee members)	<ul style="list-style-type: none"> • Salary: In accordance with internal regulations for independent director treatment, remuneration is determined based on responsibilities, etc. • Fringe benefits: Medical services, checkups, group accident insurance are provided in line with the internal regulations for independent director treatment
Audit Committee members	<ul style="list-style-type: none"> • Salary: In accordance with internal regulations for independent director treatment, remuneration is determined based on responsibilities, etc. • Fringe benefits: Medical services, checkups, group accident insurance are provided in line with the internal regulations for independent director treatment

No bonus based on performance for Independent Directors including members of the audit committee.

<Directors and Auditors with remuneration of KRW 500 million and higher >

1. Summary on remuneration by Director

(KRW mil)

Name	Position	Total amount of remuneration	Remuneration not included in total amount
Ki-nam Kim	CEO	999	-
Hyun-suk Kim	CEO	670	-
Dong-jin Koh	CEO	700	-
Jong-hee Han	Executive Director	601	-

Calculated based on compensation paid between January and June 2020.

Based on the Income Tax Law that incumbent or retired registered directors, independent directors, and members of Audit Committee in the fiscal year received in accordance with Article 159 of the Financial Investment Services and Capital Markets Act and Article 168 of the enforcement decree of the same law.

Remuneration for registered executives is the total remuneration which includes remuneration they received as non-registered executives.

2. Criteria and methodology

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Ki-nam Kim (CEO)	Earned Income	Salary	749	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on his position (vice chairman), responsibilities, and performance results. He was paid KRW 114 million per month from January to February, KRW 146 million in March, and KRW 125 million per month from April to June.
		Bonus	212	- Lunar New Year bonus: 100% of monthly wage - Performance incentive: When performance exceeds the Company's goal, CEO decides the amount with 20% of the profit achieved as resource. Paid on annual basis within the range of 0-50% of annual salary (adjusted according to individual performance). ※ Quantitative indicators suggest that the DS division achieved sales of KRW 95.5 trillion and operating profit of KRW 15.6 trillion in 2019. Qualitative indicators include excellent leadership in memory market, and contributions to enhancing competitiveness with aggressive investments in the non-memory business, including System LSI and Foundry. The amount of the bonus was determined based on the indicators (applied retroactively).
		Profit from exercising stock option	-	n/a
		Other Income	38	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a	
	Other Income	-	n/a	

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Hyun-suk Kim (CEO)	Earned Income	Salary	499	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on his position (president), responsibilities, and performance results. He was paid KRW 76 million per month in January and February, KRW 97 million in March, and KRW 83 million per month from April to June.

Name	Type of remuneration		Total amount	Criteria and methodology
	Bonus		161	- Lunar New Year bonus: 100% of monthly wage - Performance incentive: When performance exceeds the Company's goal, CEO decides the amount with 20% of the profit achieved as resource. Paid on annual basis within the range of 0–50% of annual salary (adjusted according to individual performance). ※ Quantitative indicators suggest that the CE division achieved sales of KRW 44.8 trillion and operating profit of KRW 2.6 trillion in 2019. Qualitative indicators include strengthening product leadership amid a challenging management environment by expanding a lineup that is well received by consumers, such as QLED 8K TV and Bespoke appliances. He also established a solid profit structure by improving operational organization. The amount of the bonus was determined based on the indicators (applied retroactively).
		Profit from exercising stock option	-	n/a
		Other Income	10	- Fringe benefits: Medical services, checkups, group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income		-	n/a
	Other Income		-	n/a

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Dong-jin Koh (CEO)	Earned Income	Salary	585	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on his position (president), responsibilities, and performance results. He was paid KRW 98 million per month from January to June.
		Bonus	98	- Lunar New Year bonus: 100% of monthly wage
		Profit from exercising stock option	-	n/a
		Other Income	17	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income		-	n/a
	Other Income		-	n/a

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Jong-hee Han (Director)	Earned Income	Salary	403	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on his position (president), responsibilities, and performance results. He was paid KRW 57 million per month in January and February, KRW 89 million in March, and KRW 67 million per month from April to June.
		Bonus	184	- Lunar New Year bonus: 100% of monthly wage - Performance incentive: When performance exceeds the Company's goal, CEO decides the amount with 20% of the profit achieved as resource. Paid on annual basis within the range of 0–50% of annual salary (adjusted according to individual performance). ※ Quantitative indicators suggest that the CE division achieved sales of KRW 44.8 trillion and operating profit of KRW 2.6 trillion in 2019. Qualitative indicators include recording the number one market share in the TV market for a 14th consecutive year

Name	Type of remuneration	Total amount	Criteria and methodology
			amid challenging environment by introducing innovative models, including QLED 8K TVs and Lifestyle TVs. Also, the division maintained solid sales and profitability by focusing on premium TVs. The amount of the bonus was determined based on the indicators (applied retroactively).
	Profit from exercising stock option	-	n/a
	Other Income	14	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a
	Other Income	-	n/a

<Five highest paid employees with remuneration of KRW 500 million and higher>

(1) Summary on remuneration

(KRW mil)

Name	Position	Total amount of remuneration	Remuneration not included in total amount
Oh-hyun Kwon	Advisor	11,349	-
Dong-soo Jun	Advisor	6,989	-
Boo-keun Yoon	Advisor	6,600	-
Jong-kyun Shin	Advisor	6,422	-
Young-chang Bae	Expert member	3,623	-

Calculated based on compensation paid between January and June 2020.

Based on the Income Tax Law that incumbent or retired registered directors, independent directors, and members of audit committee in the fiscal year received in accordance with Article 159 of the Financial Investment Services and Capital Markets Act and Article 168 of the enforcement decree of the same law.

(2) Criteria and methodology

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Oh-hyun Kwon	Earned Income	Salary	417	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on position (same rank as chairman), responsibilities, and performance results. He was paid KRW 104 million in January and KRW 63 million per month since being appointed as an advisor in February.
		Bonus	1,624	- Lunar New Year bonus: 100% of monthly wage - Special bonus: In accordance with internal regulation for executive treatment (Board resolution), paid one-off special bonus ※ Quantitative indicators suggest that the Company achieved revenue of KRW 108.3 trillion and operating profit of KRW 14.6 trillion in 1H20. Qualitative indicators include leading mid- to long-term business direction and future technologies and nurturing next-generation executives. The amount of bonus was determined based on the indicators.
		Profit from exercising stock option	-	n/a
		Other Income	18	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	9,290	In accordance with internal regulation for severance pay of executives (Board resolution), calculated by multiplying KRW 104 million (monthly wage at the time of retirement), 27 (years of service), and a variable within a 1.0-3.5 range.	
	Other Income	-	n/a	

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Dong-soo Jun	Earned Income	Salary	251	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on position (same rank as president), responsibilities, and performance results. He was paid KRW 85 million in January, and KRW 42 million per month since being appointed as an advisor in February. Amount paid by the subsidiary where he works concurrently, is not included in the total amount.
		Bonus	59	- Lunar New Year bonus: 100% of monthly wage. Amount paid by the subsidiary where he works concurrently, is not included in the total amount.
		Profit from exercising stock option	-	n/a
		Other Income	45	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	6,634	In accordance with internal regulation for severance pay of executives (Board resolution), calculated by multiplying KRW 85 million (monthly wage at the time of retirement), 24 (years of service), and a variable within a 1.0-3.5 range. Amount paid by the subsidiary where he works concurrently, is not included in the total amount.	
	Other Income	-	n/a	

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Boo-keun Yoon	Earned Income	Salary	345	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on position (same rank as vice chairman), responsibilities, and performance results. He was paid KRW 86 million in January and KRW 52 million per month since being appointed as an advisor in February.
		Bonus	86	- Lunar New Year bonus: 100% of monthly wage.
		Profit from exercising stock option	-	n/a
		Other Income	74	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income		6,095	In accordance with internal regulation for severance pay of executives (Board resolution), calculated by multiplying KRW 86 million (monthly wage at the time of retirement), 21 (years of service), and a variable within a 1.0-3.5 range.
	Other Income		-	n/a

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Jong-kyun Shin	Earned Income	Salary	345	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on position (same rank as vice chairman), responsibilities, and performance results. He was paid KRW 86 million in January and KRW 52 million per month since being appointed as an advisor in February.
		Bonus	86	- Lunar New Year bonus: 100% of monthly wage.
		Profit from exercising stock option	-	n/a
		Other Income	91	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income		5,900	In accordance with internal regulation for severance pay of executives (Board resolution), calculated by multiplying KRW 86 million (monthly wage at the time of retirement), 20 (years of service), and a variable within a 1.0-3.5 range.
	Other Income		-	n/a

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Young-chang Bae	Earned Income	Salary	322	In accordance with internal regulation for executive treatment (Board resolution), remuneration is determined based on position (same rank as executive vice president), responsibilities, and performance results. He was paid KRW 54 million per month from January to June.
		Bonus	54	- Lunar New Year bonus: 100% of monthly wage.
		Profit from exercising stock option	-	n/a

Name	Type of remuneration		Total amount	Criteria and methodology
		Other Income	26	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income		3,221	- Severance pay: In accordance with internal regulation for severance pay of executives (Board resolution), calculated by multiplying KRW 54 million (monthly wage at the time of retirement), 15 (years of service), and a variable within a 1.0-3.5 range. - Special contribution reward: In accordance with internal regulation for severance pay of executives (Board resolution), paid to recognize the contribution of expanding foundry customer base and new businesses.
	Other Income		-	n/a

B. Stock options granted and exercised

(1) Status of stock options granted to registered Directors

As of June 30, 2020, there were no accumulated-basis unexercised stock options granted to registered Directors.

Type	Number ¹⁾	Total fair value of stock options	Note
Registered Director	5	-	-
Independent Director	3	-	-
Audit Committee member or Auditor	3	-	-
Total	11	-	-

¹⁾ As of the reporting date.

(2) Status of stock options granted to non-registered Executives

As of June 30, 2020, there were no accumulated-basis unexercised stock options granted to non-registered Executives.

IX. Affiliates and Subsidiaries

1. Affiliates & subsidiaries

A. Affiliates

- Name of affiliated group: Samsung

As of June 30, 2020, Samsung Group consists of 59 domestic affiliates. Among the Samsung Group's 59 domestic affiliates, 16 affiliates including Samsung Electronics are listed, and 43 affiliates are unlisted.

[As of June 30, 2020]

	No. of affiliates	Name of affiliates
Listed	16	Samsung C&T; Samsung Electronics; Samsung SDI; Samsung Electro-mechanics; Samsung Fire & Marine Insurance; Samsung Heavy Industries; Samsung Life Insurance; Multicampus; Samsung Securities; Samsung SDS; Samsung Card; Samsung Engineering; S1; Cheil Worldwide; Hotel Shilla; Samsung Biologics
Unlisted	43	Seoul Lakeside CC; Samwoo Architects & Engineers; CVnet Corporation; Samsung Bioepis; Samsung Display; Samsung Corning Advanced Glass; SU Materials; STECO; SEMES; Samsung Electronics Service; Samsung Electronics Sales; Samsung Electronics Logitech; Suwon Samsung Bluewings FC; Samsung Medison; Samsung Claim Adjustment Service; Samsung Fire & Marine Insurance Service; Samsung Fire & Marine Insurance Financial Service; Samsung Electronics Service CS; Samsung Futures; Samsung Asset Management; Samsung Life Service; Samsung SRA Asset Management; Samsung Life Financial Service; SD Flex; Cheil Fashion Retail Co., Ltd.; Samsung Welstory; SECUI; STM; S-Core; OpenHands; Miracom; Samsung Card Customer Service; Human TSS; S-1CRM; Shilla Stay; HDC Shilla Duty Free LTD; Samsung Economic Research Institute (SERI); Samsung Lions; Samsung Venture Investment Corporation; Samsung Active Asset Management; Samsung Hedge Asset Management; Harman International Korea; SBTM
Total	59	

B. Ownership status of affiliates and subsidiaries

1) Domestic

Investee Investor	Samsung C&T Corp	Samsung Electronics	Samsung SDI	Samsung Electro-mechanics	Samsung Heavy Industries	Hotel Shilla	Samsung Engineering	Cheil Worldwide	S1 Corporation	Samsung SDS	Samsung Lions	SERI	STECO
Samsung C&T Corporation	-	5.0	-	-	0.1	-	7.0	-	-	17.1	-	1.0	-
Samsung Electronics	-	-	19.6	23.7	16.0	5.1	-	25.2	-	22.6	-	29.8	70.0
Samsung SDI	-	-	-	-	0.4	0.1	11.7	-	11.0	-	-	29.6	-
Samsung Electro-mechanics	-	-	-	-	2.2	-	-	-	-	-	-	23.8	-
Samsung Heavy Industries	-	-	-	-	-	-	-	-	-	-	-	1.0	-
Cheil Worldwide	-	-	-	-	0.1	-	-	-	-	-	67.5	-	-
Hotel Shilla	-	-	-	-	-	-	-	-	-	-	-	-	-
S1 Corporation	-	-	-	-	-	-	-	-	-	-	-	-	-
SERI	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung SDS	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Life Insurance	0.1	8.8	0.1	0.2	3.1	7.5	0.1	0.3	5.4	0.1	-	14.8	-
Samsung Fire & Marine Insurance	-	1.5	-	-	-	-	0.2	-	1.0	-	-	-	-
Samsung Securities.	-	-	-	-	-	3.1	-	-	1.3	-	-	-	-
Samsung Card	-	-	-	-	-	1.3	-	3.0	1.9	-	-	-	-
SDC	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung BioLogics	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Asset Management	-	-	-	-	-	-	-	-	-	-	-	-	-
Miracom	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Eelectronics Service	-	-	-	-	-	-	-	-	-	-	-	-	-
Harman International Industries, Inc.	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	0.1	15.3	19.7	23.9	21.9	17.1	19.0	28.6	20.6	39.8	67.5	100.0	70.0

Percent of ownership as of June 30, 2020 based on common shares

Investee Investor	SEMES	Samsung Electronics Service	Samsung Electronics Sales	Suwon Samsung Bluewings FC	Samsung Electronics Logitech	Samsung Display	Samsung Medison	Samsung BioLogics	Samsung BioEpis	Samsung Corning Advanced Glass	SU Materials	CVnet	Seoul Lakeside CC
Samsung C&T Corporation	-	-	-	-	-	-	-	43.4	-	-	-	40.1	100.0
Samsung Electronics	91.5	99.3	100.0	-	100.0	84.8	68.5	31.5	-	-	-	-	-
Samsung SDI	-	-	-	-	-	15.2	-	-	-	-	-	-	-
Samsung Electro-mechanics	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Heavy Industries	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheil Worldwide	-	-	-	100.0	-	-	-	-	-	-	-	-	-
Hotel Shilla	-	-	-	-	-	-	-	-	-	-	-	-	-
S1 Corporation	-	-	-	-	-	-	-	-	-	-	-	-	-
SERI	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung SDS	-	-	-	-	-	-	-	-	-	-	-	9.4	-
Samsung Life Insurance	-	-	-	-	-	-	-	0.1	-	-	-	-	-
Samsung Fire & Marine Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Securities.	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Card	-	-	-	-	-	-	-	-	-	-	-	-	-
SDC	-	-	-	-	-	-	-	-	-	50.0	50.0	-	-
Samsung BioLogics	-	-	-	-	-	-	-	-	50.0	-	-	-	-
Samsung Asset Management	-	-	-	-	-	-	-	-	-	-	-	-	-
Miracom	-	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Eelectronics Service	-	-	-	-	-	-	-	-	-	-	-	-	-
Harman International Industries, Inc.	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	91.5	99.3	100.0	100.0	100.0	100.0	68.5	75.0	50.0	50.0	50.0	49.5	100.0

Percent of ownership as of June 30, 2020 based on common shares

Investee Investor	Samwoo Architects & Engineers	SD Flex	Cheil Fashion Retail	Samsung Welstory	Service CS	SECUI	Human TSS	S-1CRM	STM	MULTI CAMPUS	S-Core	Open Hands
Samsung C&T Corporation	100.0	-	100.0	100.0	-	8.7	-	-	-	-	-	-
Samsung Electronics	-	-	-	-	-	-	-	-	-	-	-	-
Samsung SDI	-	50.0	-	-	-	-	-	-	100.0	-	-	-
Samsung Electro-mechanics	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Heavy Industries	-	-	-	-	-	-	-	-	-	-	-	-
Cheil Worldwide	-	-	-	-	-	-	-	-	-	-	5.2	-
Hotel Shilla	-	-	-	-	-	-	-	-	-	-	-	-
S1 Corporation	-	-	-	-	-	-	100.0	100.0	-	-	0.6	-
SERI	-	-	-	-	-	-	-	-	-	15.2	-	-
Samsung SDS	-	-	-	-	-	56.5	-	-	-	47.2	81.8	100.0
Samsung Life Insurance	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Fire & Marine Insurance	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Securities.	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Card	-	-	-	-	-	-	-	-	-	-	-	-
SDC	-	-	-	-	-	-	-	-	-	-	-	-
Samsung BioLogics	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Asset Management	-	-	-	-	-	-	-	-	-	-	-	-
Miracom	-	-	-	-	-	-	-	-	-	-	0.5	-
Samsung Eelectronics Service	-	-	-	-	100.0	-	-	-	-	-	-	-
Harman International Industries, Inc.	-	-	-	-	-	-	-	-	-	-	-	-
Total	100.0	50.0	100.0	100.0	100.0	65.2	100.0	100.0	100.0	62.4	88.1	100.0

Percent of ownership as of June 30, 2020 based on common shares

Investee Investor	Miracom	Shilla Stay	HDC Shilla Duty Free LTD	SBTM	Samsung Life Insurance	Samsung Life Service	Samsung SRA Asset Management	Samsung Life Financial Service	Samsung Fire & Marine Insurance	Samsung Claim Adjustment Service	Samsung Fire & Marine Insurance Service	Samsung Fire & Marine Financial Service
Samsung C&T Corporation	-	-	-	-	19.3	-	-	-	-	-	-	-
Samsung Electronics	-	-	-	-	-	-	-	-	-	-	-	-
Samsung SDI	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Electro-mechanics	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Heavy Industries	-	-	-	-	-	-	-	-	-	-	-	-
Cheil Worldwide	5.4	-	-	-	-	-	-	-	-	-	-	-
Hotel Shilla	-	100.0	50.0	100.0	-	-	-	-	-	-	-	-
S1 Corporation	0.6	-	-	-	-	-	-	-	-	-	-	-
SERI	-	-	-	-	-	-	-	-	-	-	-	-
Samsung SDS	83.6	-	-	-	-	-	-	-	-	-	-	-
Samsung Life Insurance	-	-	-	-	-	99.8	100.0	100.0	15.0	-	-	-
Samsung Fire & Marine Insurance	-	-	-	-	-	-	-	-	-	100.0	100.0	100.0
Samsung Securities.	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Card	-	-	-	-	-	-	-	-	-	-	-	-
SDC	-	-	-	-	-	-	-	-	-	-	-	-
Samsung BioLogics	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Asset Management	-	-	-	-	-	-	-	-	-	-	-	-
Miracom	-	-	-	-	-	-	-	-	-	-	-	-
Samsung Eelectronics Service	-	-	-	-	-	-	-	-	-	-	-	-
Harman International Industries, Inc.	-	-	-	-	-	-	-	-	-	-	-	-
Total	89.6	100.0	50.0	100.0	19.3	99.8	100.0	100.0	15.0	100.0	100.0	100.0

Percent of ownership as of June 30, 2020 based on common shares

Investee Investor	Samsung Securities	Samsung Card	Samsung Card Customer Service	Samsung Asset Management	Samsung Futures	Samsung Venture Investment	Samsung Active Asset Management	Samsung Hedge Asset Management	Harman International Korea
Samsung C&T Corporation	-	-	-	-	-	16.7	-	-	-
Samsung Electronics	-	-	-	-	-	16.3	-	-	-
Samsung SDI	-	-	-	-	-	16.3	-	-	-
Samsung Electro-mechanics	-	-	-	-	-	17.0	-	-	-
Samsung Heavy Industries	-	-	-	-	-	17.0	-	-	-
Cheil Worldwide	-	-	-	-	-	-	-	-	-
Hotel Shilla	-	-	-	-	-	-	-	-	-
S1 Corporation	-	-	-	-	-	-	-	-	-
SERI	-	-	-	-	-	-	-	-	-
Samsung SDS	-	-	-	-	-	-	-	-	-
Samsung Life Insurance	29.5	71.9	-	100.0	-	-	-	-	-
Samsung Fire & Marine Insurance	-	-	-	-	-	-	-	-	-
Samsung Securities.	-	-	-	-	100.0	16.7	-	-	-
Samsung Card	-	-	100.0	-	-	-	-	-	-
SDC	-	-	-	-	-	-	-	-	-
Samsung BioLogics	-	-	-	-	-	-	-	-	-
Samsung Asset Management	-	-	-	-	-	-	100.0	100.0	-
Miracom	-	-	-	-	-	-	-	-	-
Samsung Eelectronics Service	-	-	-	-	-	-	-	-	-
Harman International Industries, Inc.	-	-	-	-	-	-	-	-	100.0
Total	29.5	71.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Percent of ownership as of June 30, 2020 based on common shares

2) Overseas

Investor	Investee	Ownership
Samwoo Architects & Engineers	SAMOO HU Designer and Engineering Services Limited	100.0
Samwoo Architects & Engineers	SAMOO DESIGNERS & ENGINEERS INDIA PRIVATE LIMITED	100.0
Samwoo Architects & Engineers	SAMOO (KL) SDN. BHD.	100.0
Samsung C&T America Inc.	Meadowland Distribution	100.0
Samsung C&T America Inc.	Samsung Green repower, LLC	100.0
Samsung C&T America Inc.	Samsung Solar Construction Inc.	100.0
Samsung C&T America Inc.	QSSC, S.A. de C.V.	20.0
Samsung C&T America Inc.	Samsung Solar Energy LLC	100.0
Samsung C&T America Inc.	S-print Inc	24.0
Samsung Renewable Energy Inc.	SP Armow Wind Ontario LP	50.0
Samsung Renewable Energy Inc.	SRE GRW EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE GRW EPC LP	100.0
Samsung Renewable Energy Inc.	SRE SKW EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE SKW EPC LP	100.0
Samsung Renewable Energy Inc.	SRE WIND PA GP INC.	100.0
Samsung Renewable Energy Inc.	SRE WIND PA LP	100.0
Samsung Renewable Energy Inc.	SRE GRS Holdings GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE GRS Holdings LP	100.0
Samsung Renewable Energy Inc.	SRE K2 EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE K2 EPC LP	100.0
Samsung Renewable Energy Inc.	SRE KS HOLDINGS GP INC.	100.0
Samsung Renewable Energy Inc.	SRE KS HOLDINGS LP	100.0
Samsung Renewable Energy Inc.	SP Belle River Wind LP	42.5
Samsung Renewable Energy Inc.	SRE Armow EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Armow EPC LP	100.0
Samsung Renewable Energy Inc.	North Kent Wind 1 LP	35.0
Samsung Renewable Energy Inc.	SRE Wind GP Holding Inc.	100.0
Samsung Renewable Energy Inc.	South Kent Wind LP Inc.	50.0
Samsung Renewable Energy Inc.	Grand Renewable Wind LP Inc.	45.0
Samsung Renewable Energy Inc.	SRE North Kent 2 LP Holdings LP	100.0
Samsung Renewable Energy Inc.	SRE Solar Development GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Solar Development LP	100.0
Samsung Renewable Energy Inc.	SRE Windsor Holdings GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Southgate Holdings GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Solar Construction Management GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Solar Construction Management LP	100.0
Samsung Renewable Energy Inc.	SRE DEVELOPMENT GP INC.	100.0
Samsung Renewable Energy Inc.	SRE DEVELOPMENT LP	100.0
Samsung Renewable Energy Inc.	SRE BRW EPC GP INC.	100.0
Samsung Renewable Energy Inc.	SRE BRW EPC LP	100.0
Samsung Renewable Energy Inc.	SRE North Kent 1 GP Holdings Inc	100.0
Samsung Renewable Energy Inc.	SRE North Kent 2 GP Holdings Inc	100.0
Samsung Renewable Energy Inc.	SRE Belle River GP Holdings Inc	100.0
Samsung Renewable Energy Inc.	SRE NK1 EPC GP Inc	100.0
Samsung Renewable Energy Inc.	SRE NK1 EPC LP	100.0
Samsung Renewable Energy Inc.	SRE Summerside Construction GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Summerside Construction LP	100.0
Samsung Renewable Energy Inc.	Kneehill Solar GP	100.0
Samsung Renewable Energy Inc.	Kneehill Solar LP	100.0
Samsung Renewable Energy Inc.	Michichi Solar GP Inc.	100.0
Samsung Renewable Energy Inc.	Michichi Solar LP	100.0
Samsung Green repower, LLC	SOLAR PROJECTS SOLUTIONS,LLC	50.0

Investor	Investee	Ownership
Samsung Green repower, LLC	Monument Power, LLC	100.0
SP Armow Wind Ontario GP Inc	SP Armow Wind Ontario LP	0.0
Samsung C&T Oil & Gas Parallel Corp.	PLL Holdings LLC	83.6
Samsung C&T Oil & Gas Parallel Corp.	PLL E&P LLC	90.0
SRE GRW EPC GP Inc.	SRE GRW EPC LP	0.0
SRE SKW EPC GP Inc.	SRE SKW EPC LP	0.0
PLL Holdings LLC	Parallel Petroleum LLC	61.0
SRE WIND PA GP INC.	SRE WIND PA LP	0.0
SRE GRS Holdings GP Inc.	Grand Renewable Solar GP Inc.	50.0
SRE GRS Holdings GP Inc.	SRE GRS Holdings LP	0.0
SRE K2 EPC GP Inc.	SRE K2 EPC LP	0.0
SRE KS HOLDINGS GP INC.	KINGSTON SOLAR GP INC.	50.0
SRE KS HOLDINGS GP INC.	SRE KS HOLDINGS LP	0.0
SP Belle River Wind GP Inc	SP Belle River Wind LP	0.0
SRE Armow EPC GP Inc.	SRE Armow EPC LP	0.0
SRE Wind GP Holding Inc.	SP Armow Wind Ontario GP Inc	50.0
SRE Wind GP Holding Inc.	South Kent Wind GP Inc.	50.0
SRE Wind GP Holding Inc.	Grand Renewable Wind GP Inc.	50.0
South Kent Wind GP Inc.	South Kent Wind LP Inc.	0.0
Grand Renewable Wind GP Inc.	Grand Renewable Wind LP Inc.	0.0
North Kent Wind 1 GP Inc	North Kent Wind 1 LP	0.0
SRE Solar Development GP Inc.	SRE Solar Development LP	0.0
SRE Solar Construction Management GP Inc.	SRE Solar Construction Management LP	0.0
SRE DEVELOPMENT GP INC.	SRE DEVELOPMENT LP	0.0
SRE BRW EPC GP INC.	SRE BRW EPC LP	0.0
SRE North Kent 1 GP Holdings Inc	North Kent Wind 1 GP Inc	50.0
SRE North Kent 2 GP Holdings Inc	SRE North Kent 2 LP Holdings LP	0.0
SRE Belle River GP Holdings Inc	SP Belle River Wind GP Inc	50.0
SRE NK1 EPC GP Inc	SRE NK1 EPC LP	0.0
SRE Summerside Construction GP Inc.	SRE Summerside Construction LP	0.0
Samsung Solar Energy LLC	Samsung Solar Energy 1 LLC	100.0
Samsung Solar Energy LLC	Samsung Solar Energy 2 LLC	100.0
Samsung Solar Energy LLC	Samsung Solar Energy 3, LLC	100.0
Samsung Solar Energy 1 LLC	CS SOLAR LLC	50.0
Kneehill Solar GP	Kneehill Solar LP	0.0
Samsung Solar Energy 3, LLC	SST SOLAR, LLC	50.0
Michichi Solar GP Inc.	Michichi Solar LP	0.0
Samsung C&T Deutschland GmbH	POSS-SLPC, S.R.O	20.0
Samsung C&T Deutschland GmbH	Solluce Romania 1 B.V.	20.0
Samsung C&T Deutschland GmbH	S.C. Otelinox S.A	94.3
Solluce Romania 1 B.V.	LJG GREEN SOURCE ENERGY ALPHA S.R.L.	78.0
Samsung C&T Singapore Pte., Ltd.	Samsung Chemtech Vina LLC	48.3
Samsung C&T Singapore Pte., Ltd.	S-print Inc	16
Samsung C&T Singapore Pte., Ltd.	Samsung C&T Thailand Co., Ltd	0.2
Samsung C&T Singapore Pte., Ltd.	PT. INSAM BATUBARA ENERGY	10.0
Samsung C&T Singapore Pte., Ltd.	Malaysia Samsung Steel Center Sdn.Bhd	30.0
Samsung C&T Singapore Pte., Ltd.	S&G Biofuel PTE.LTD	12.6
S&G Biofuel PTE.LTD	PT. Gandaerah Hendana	95.0
S&G Biofuel PTE.LTD	PT. Inecda	95.0
Samsung C&T Hongkong Ltd.	Samsung C&T Thailand Co., Ltd	6.8
Samsung C&T Hongkong Ltd.	SAMSUNG (TIANJIN) INTERNATIONAL TRADING CO., LTD	100.0
Samsung C&T Hongkong Ltd.	SAMSUNG TRADING (SHANGHAI) CO., LTD	100.0
Samsung C&T Hongkong Ltd.	Samsung Precision Stainless Steel(pinghu) Co.,Ltd.	45.0
Samsung Electronics	Samsung Japan Corporation	100.0
Samsung Electronics	Samsung R&D Institute Japan Co. Ltd.	100.0

Investor	Investee	Ownership
Samsung Electronics	Samsung Electronics America, Inc.	100.0
Samsung Electronics	Samsung Electronics Canada, Inc.	100.0
Samsung Electronics	Samsung Electronics Mexico S.A. De C.V.	63.6
Samsung Electronics	Samsung Electronics Ltd.	100.0
Samsung Electronics	Samsung Electronics (UK) Ltd.	100.0
Samsung Electronics	Samsung Electronics Holding GmbH	100.0
Samsung Electronics	Samsung Electronics Iberia, S.A.	100.0
Samsung Electronics	Samsung Electronics France S.A.S	100.0
Samsung Electronics	Samsung Electronics Hungarian Private Co. Ltd.	100.0
Samsung Electronics	Samsung Electronics Italia S.P.A.	100.0
Samsung Electronics	Samsung Electronics Europe Logistics B.V.	100.0
Samsung Electronics	Samsung Electronics Benelux B.V.	100.0
Samsung Electronics	Samsung Electronics Overseas B.V.	100.0
Samsung Electronics	Samsung Electronics Polska, SP.Zo.o	100.0
Samsung Electronics	Samsung Electronics Portuguesa S.A.	100.0
Samsung Electronics	Samsung Electronics Nordic Aktiebolag	100.0
Samsung Electronics	Samsung Electronics Austria GmbH	100.0
Samsung Electronics	Samsung Electronics Slovakia s.r.o	55.7
Samsung Electronics	Samsung Electronics Europe Holding Cooperatief U.A.	100.0
Samsung Electronics	Samsung Electronics Display (M) Sdn. Bhd.	75.0
Samsung Electronics	Samsung Electronics (M) Sdn. Bhd.	100.0
Samsung Electronics	Samsung Vina Electronics Co., Ltd.	100.0
Samsung Electronics	Samsung Asia Private Ltd.	100.0
Samsung Electronics	Samsung India Electronics Private Ltd.	100.0
Samsung Electronics	Samsung R&D Institute India-Bangalore Private Limited	100.0
Samsung Electronics	Samsung Electronics Australia Pty. Ltd.	100.0
Samsung Electronics	PT Samsung Electronics Indonesia	100.0
Samsung Electronics	Thai Samsung Electronics Co., Ltd.	91.8
Samsung Electronics	Samsung Malaysia Electronics (SME) Sdn. Bhd.	100.0
Samsung Electronics	Samsung Electronics Hong Kong Co., Ltd.	100.0
Samsung Electronics	Suzhou Samsung Electronics Co., Ltd.	69.1
Samsung Electronics	Samsung (CHINA) Investment Co., Ltd.	100.0
Samsung Electronics	Samsung Electronics Suzhou Semiconductor Co., Ltd.	100.0
Samsung Electronics	Samsung Electronics Huizhou Co., Ltd.	89.6
Samsung Electronics	Tianjin Samsung Electronics Co., Ltd.	48.2
Samsung Electronics	Samsung Electronics Taiwan Co., Ltd.	100.0
Samsung Electronics	Tianjin Samsung Telecom Technology Co., Ltd.	90.0
Samsung Electronics	Shanghai Samsung Semiconductor Co., Ltd.	100.0
Samsung Electronics	Samsung Electronics Suzhou Computer Co., Ltd.	73.7
Samsung Electronics	Shenzhen Samsung Electronics Telecommunication Co., Ltd.	100.0
Samsung Electronics	Samsung Semiconductor (China) R&D Co., Ltd.	100.0
Samsung Electronics	Samsung (China) Semiconductor Co., Ltd.	100.0
Samsung Electronics	Samsung SemiConductor Xian Co., Ltd.	100.0
Samsung Electronics	Samsung Gulf Electronics Co., Ltd.	100.0
Samsung Electronics	Samsung Electronics Egypt S.A.E	0.1
Samsung Electronics	Samsung Electronics South Africa(Pty) Ltd.	100.0
Samsung Electronics	Samsung Electronics Latinoamerica(Zona Libre), S. A.	100.0
Samsung Electronics	Samsung Electronica da Amazonia Ltda.	87.0
Samsung Electronics	Samsung Electronics Argentina S.A.	98.0
Samsung Electronics	Samsung Electronics Chile Limitada	4.1
Samsung Electronics	Samsung Electronics Rus Company LLC	100.0
Samsung Electronics	Samsung Electronics Rus Kaluga LLC	100.0
Samsung Electronics	Tianjin Samsung LED Co., Ltd.	100.0
Samsung BioEpis	Samsung Biologics America, Inc.	100.0
Samsung BioEpis	SAMSUNG BIOEPIS UK LIMITED	100.0

Investor	Investee	Ownership
Samsung BioEpis	Samsung Bioepis NL B.V.	100.0
Samsung BioEpis	Samsung Bioepis CH GmbH	100.0
Samsung BioEpis	Samsung Bioepis PL Sp z o.o.	100.0
Samsung BioEpis	SAMSUNG BIOEPIS AU PTY LTD	100.0
Samsung BioEpis	SAMSUNG BIOEPIS NZ LIMITED	100.0
Samsung BioEpis	SAMSUNG BIOEPIS TW Limited	100.0
Samsung BioEpis	Samsung Bioepis HK Limited	100.0
Samsung BioEpis	SAMSUNG BIOEPIS IL LTD	100.0
Samsung BioEpis	SAMSUNG BIOEPIS BR PHARMACEUTICAL LTDA	100.0
Samsung Display	Intellectual Keystone Technology LLC	41.9
Samsung Display	Samsung Display Slovakia, s.r.o.	100.0
Samsung Display	Samsung Display Vietnam Co., Ltd.	100.0
Samsung Display	Samsung Display Noida Private Limited	100.0
Samsung Display	Samsung Suzhou Module Co., Ltd.	100.0
Samsung Display	Samsung Suzhou LCD Co., Ltd.	60.0
Samsung Display	Samsung Display Dongguan Co., Ltd.	100.0
Samsung Display	Samsung Display Tianjin Co., Ltd.	95.0
Samsung Display	Novald GmbH	9.9
SEMES	SEMES America, Inc.	100.0
SEMES	SEMES (XIAN) Co., Ltd.	100.0
Samsung Electronics America, Inc.	NeuroLogica Corp.	100.0
Samsung Electronics America, Inc.	Dacor Holdings, Inc.	100.0
Samsung Electronics America, Inc.	Samsung HVAC America, LLC	100.0
Samsung Electronics America, Inc.	SmartThings, Inc.	100.0
Samsung Electronics America, Inc.	Samsung Oak Holdings, Inc.	100.0
Samsung Electronics America, Inc.	Joyent, Inc.	100.0
Samsung Electronics America, Inc.	TeleWorld Solutions, Inc.	100.0
Samsung Electronics America, Inc.	Prismview, LLC	100.0
Samsung Electronics America, Inc.	Samsung Semiconductor, Inc.	100.0
Samsung Electronics America, Inc.	Samsung Research America, Inc	100.0
Samsung Electronics America, Inc.	Samsung Electronics Home Appliances America, LLC	100.0
Samsung Electronics America, Inc.	Samsung International, Inc.	100.0
Samsung Electronics America, Inc.	Harman International Industries, Inc.	100.0
Dacor Holdings, Inc.	Dacor, Inc.	100.0
Dacor Holdings, Inc.	EverythingDacor.com, Inc.	100.0
Dacor Holdings, Inc.	Distinctive Appliances of California, Inc.	100.0
Dacor, Inc.	Dacor Canada Co.	100.0
Samsung Oak Holdings, Inc.	Stellus Technologies, Inc.	99.9
TeleWorld Solutions, Inc.	TWS LATAM B, LLC	100.0
TeleWorld Solutions, Inc.	TWS LATAM S, LLC	100.0
TWS LATAM B, LLC	SNB Technologies, Inc. Mexico S.A. de. C.V	50.0
TWS LATAM S, LLC	SNB Technologies, Inc. Mexico S.A. de. C.V	50.0
Samsung Semiconductor, Inc.	Samsung Austin Semiconductor LLC.	100.0
Samsung Electronics Canada, Inc.	AdGear Technologies Inc.	100.0
Samsung Electronics Canada, Inc.	SigMast Communications Inc.	100.0
Samsung Research America, Inc	SAMSUNG NEXT LLC	100.0
Samsung Research America, Inc	Viv Labs, Inc.	100.0
SAMSUNG NEXT LLC	SAMSUNG NEXT FUND LLC	100.0
Samsung International, Inc.	Samsung Mexicana S.A. de C.V	100.0
Samsung Electronics Mexico S.A. De C.V.	Samsung Electronics Digital Appliance Mexico, SA de CV	100.0
Harman International Industries, Inc.	Harman International Japan Co., Ltd.	100.0
Harman International Industries, Inc.	Harman International Industries Canada Ltd.	100.0
Harman International Industries, Inc.	Harman Becker Automotive Systems, Inc.	100.0
Harman International Industries, Inc.	Harman Professional, Inc.	100.0
Harman International Industries, Inc.	Harman Connected Services, Inc.	100.0

Investor	Investee	Ownership
Harman International Industries, Inc.	Harman Financial Group LLC	100.0
Harman International Industries, Inc.	Harman Belgium SA	100.0
Harman International Industries, Inc.	Harman France SNC	100.0
Harman International Industries, Inc.	Red Bend Software SAS	100.0
Harman International Industries, Inc.	Harman Inc. & Co. KG	66.0
Harman International Industries, Inc.	Harman KG Holding, LLC	100.0
Harman International Industries, Inc.	Harman Becker Automotive Systems Italy S.R.L.	100.0
Harman International Industries, Inc.	Harman Finance International, SCA	100.0
Harman International Industries, Inc.	Harman Finance International GP S.a.r.l	100.0
Harman International Industries, Inc.	Harman Industries Holdings Mauritius Ltd.	100.0
Harman International Industries, Inc.	Harman International Mexico, S. de R.L. de C.V.	99.9
Harman Becker Automotive Systems, Inc.	Harman International Estonia OU	100.0
Harman Professional, Inc.	AMX UK Limited	100.0
Harman Professional, Inc.	Harman Singapore Pte. Ltd.	100.0
Harman Professional, Inc.	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	0.0
Harman Professional, Inc.	Harman do Brasil Industria Eletronica e Participacoes Ltda.	0.0
Harman Connected Services, Inc.	Harman Connected Services Engineering Corp.	100.0
Harman Connected Services, Inc.	Harman Connected Services South America S.R.L.	100.0
Harman Connected Services, Inc.	Harman Connected Services AB.	100.0
Harman Connected Services, Inc.	Harman Connected Services UK Ltd.	100.0
Harman Connected Services, Inc.	Harman Connected Services Corp. India Pvt. Ltd.	1.6
Harman Connected Services, Inc.	Global Symphony Technology Group Private Ltd.	100.0
Harman Financial Group LLC	Harman International (India) Private Limited	0.0
Harman Financial Group LLC	Harman International Mexico, S. de R.L. de C.V.	0.1
Harman Financial Group LLC	Harman de Mexico, S. de R.L. de C.V.	0.0
Samsung Electronics (UK) Ltd.	Samsung Semiconductor Europe Limited	100.0
Samsung Electronics Holding GmbH	Samsung Semiconductor Europe GmbH	100.0
Samsung Electronics Holding GmbH	Samsung Electronics GmbH	100.0
Samsung Electronics Hungarian Private Co. Ltd.	Samsung Electronics Czech and Slovak s.r.o.	31.4
Samsung Electronics Hungarian Private Co. Ltd.	Samsung Electronics Slovakia s.r.o	44.3
Samsung Electronics Benelux B.V.	Samsung Electronics Mexico S.A. De C.V.	36.4
Samsung Electronics Benelux B.V.	SAMSUNG ELECTRONICS BALTICS SIA	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics West Africa Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics East Africa Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Saudi Arabia Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Egypt S.A.E	99.9
Samsung Electronics Benelux B.V.	Samsung Electronics Israel Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Tunisia S.A.R.L	99.0
Samsung Electronics Benelux B.V.	Samsung Electronics Pakistan(Private) Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics South Africa Production (pty) Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Turkey	100.0
Samsung Electronics Benelux B.V.	Samsung Semiconductor Israel R&D Center, Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Levant Co.,Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Maghreb Arab	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Venezuela, C.A.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronica da Amazonia Ltda.	13.0
Samsung Electronics Benelux B.V.	Samsung Electronics Chile Limitada	95.9
Samsung Electronics Benelux B.V.	Samsung Electronics Peru S.A.C.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Ukraine Company LLC	100.0
Samsung Electronics Benelux B.V.	Samsung R&D Institute Rus LLC	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Central Eurasia LLP	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Caucasus Co. Ltd	100.0
Samsung Electronics Benelux B.V.	Corephotonics Ltd.	100.0
Zhilabs, S.L.	Zhilabs Inc.	100.0
Samsung Electronics Nordic Aktiebolag	Samsung Nanoradio Design Center	100.0

Investor	Investee	Ownership
AKG Acoustics Gmbh	Harman Professional Denmark ApS	100.0
AKG Acoustics Gmbh	Studer Professional Audio GmbH	100.0
Harman Professional Denmark ApS	Martin Professional Japan Ltd.	40.0
Harman Professional Denmark ApS	Harman International s.r.o	100.0
Harman Becker Automotive Systems GmbH	Harman International Romania SRL	0.0
Harman Holding GmbH & Co. KG	Harman Becker Automotive Systems GmbH	100.0
Harman Holding GmbH & Co. KG	Harman Deutschland GmbH	100.0
Harman Holding GmbH & Co. KG	Harman Becker Automotive Systems Manufacturing Kft	100.0
Harman Holding GmbH & Co. KG	Harman RUS CIS LLC	100.0
Harman Inc. & Co. KG	Harman Holding GmbH & Co. KG	100.0
Harman Inc. & Co. KG	Harman Management GmbH	100.0
Harman Inc. & Co. KG	Harman Hungary Financing Ltd.	100.0
Harman Connected Services GmbH	Harman Connected Services OOO	100.0
Harman KG Holding, LLC	Harman Inc. & Co. KG	34.0
Harman Becker Automotive Systems Manufacturing Kft	Harman Professional Kft	100.0
Harman Becker Automotive Systems Manufacturing Kft	Harman Consumer Nederland B.V.	100.0
Harman Becker Automotive Systems Manufacturing Kft	Harman International Romania SRL	100.0
Harman Becker Automotive Systems Manufacturing Kft	Red Bend Ltd.	100.0
Harman Becker Automotive Systems Manufacturing Kft	Harman do Brasil Industria Eletronica e Participacoes Ltda.	100.0
Harman Hungary Financing Ltd.	Harman International Industries Limited	100.0
Harman Finance International GP S.a.r.l	Harman Finance International, SCA	0.0
Harman Consumer Nederland B.V.	AKG Acoustics Gmbh	100.0
Harman Consumer Nederland B.V.	Harman Audio Iberia Espana Sociedad Limitada	100.0
Harman Consumer Nederland B.V.	Harman Holding Limited	100.0
Harman Audio Iberia Espana Sociedad Limitada	Harman France SNC	0.0
Harman Connected Services AB.	Harman Finland Oy	100.0
Harman Connected Services AB.	Harman Connected Services GmbH	100.0
Harman Connected Services AB.	Harman Connected Services Poland Sp.zoo	100.0
Harman Connected Services AB.	Harman Connected Services Solutions (Chengdu) Co., Ltd.	100.0
Harman Automotive UK Limited	Harman de Mexico, S. de R.L. de C.V.	100.0
Harman International Industries Limited	Harman Automotive UK Limited	100.0
Harman International Industries Limited	Martin Manufacturing (UK) Ltd	100.0
Harman International Industries Limited	Harman Connected Services Limited	100.0
Harman International Industries Limited	Arcam Limited	100.0
Harman International Industries Limited	Harman International Industries PTY Ltd.	100.0
Harman Connected Services UK Ltd.	Harman Connected Services Morocco	100.0
Arcam Limited	A&R Cambridge Limited	100.0
Samsung Electronics Austria GmbH	Samsung Electronics Switzerland GmbH	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Czech and Slovak s.r.o.	68.6
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Romania LLC	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Zhilabs, S.L.	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Porta Nuova Varesine Building 2 S.r.l.	49.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Poland Manufacturing SP.Zo.o	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Greece S.M.S.A	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Air Conditioner Europe B.V.	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	FOODIENT LTD.	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Denmark Research Center ApS	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Cambridge Solution Centre Limited	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Novald GmbH	40.0
Samsung Asia Private Ltd.	Samsung Electronics Japan Co., Ltd.	100.0
Samsung Asia Private Ltd.	Samsung Electronics Display (M) Sdn. Bhd.	25.0
Samsung Asia Private Ltd.	Samsung Electronics New Zealand Limited	100.0
Samsung Asia Private Ltd.	Samsung Electronics Philippines Corporation	100.0
Samsung Asia Private Ltd.	Samsung R&D Institute BanglaDesh Limited	100.0
Samsung Asia Private Ltd.	Samsung Electronics Vietnam Co., Ltd.	100.0

Investor	Investee	Ownership
Samsung Asia Private Ltd.	Samsung Electronics Vietnam THANGUYEN Co., Ltd.	100.0
Samsung Asia Private Ltd.	Samsung Electronics HCMC CE Complex Co., Ltd.	100.0
Samsung Asia Private Ltd.	Samsung Electro-Mechanics(Thailand) Co., Ltd.	25.0
Samsung Asia Private Ltd.	iMarket Asia Co., Ltd.	11.4
Samsung India Electronics Private Ltd.	Samsung Nepal Services Pvt, Ltd	100.0
PT Samsung Electronics Indonesia	PT Samsung Telecommunications Indonesia	100.0
Thai Samsung Electronics Co., Ltd.	Laos Samsung Electronics Sole Co., Ltd	100.0
Samsung Electronics Hong Kong Co., Ltd.	iMarket Asia Co., Ltd.	11.3
Suzhou Samsung Electronics Co., Ltd.	Samsung Suzhou Electronics Export Co., Ltd.	100.0
Samsung (CHINA) Investment Co., Ltd.	Suzhou Samsung Electronics Co., Ltd.	19.2
Samsung (CHINA) Investment Co., Ltd.	Samsung Mobile R&D Center China-Guangzhou	100.0
Samsung (CHINA) Investment Co., Ltd.	Samsung Tianjin Mobile Development Center	100.0
Samsung (CHINA) Investment Co., Ltd.	Samsung R&D Institute China-Shenzhen	100.0
Samsung (CHINA) Investment Co., Ltd.	Samsung Electronics Huizhou Co., Ltd.	10.4
Samsung (CHINA) Investment Co., Ltd.	Tianjin Samsung Electronics Co., Ltd.	43.1
Samsung (CHINA) Investment Co., Ltd.	Beijing Samsung Telecom R&D Center	100.0
Samsung (CHINA) Investment Co., Ltd.	Samsung Electronics Suzhou Computer Co., Ltd.	26.3
Samsung (CHINA) Investment Co., Ltd.	Samsung Electronics China R&D Center	100.0
Harman International (China) Holdings Co., Ltd.	Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	100.0
Harman International (China) Holdings Co., Ltd.	Harman Technology (Shenzhen) Co., Ltd.	100.0
Harman International (China) Holdings Co., Ltd.	Harman (China) Technologies Co., Ltd.	100.0
Harman Holding Limited	Harman Commercial (Shanghai) Co., Ltd.	100.0
Harman Holding Limited	Harman International (China) Holdings Co., Ltd.	100.0
Harman Holding Limited	Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	100.0
Samsung Gulf Electronics Co., Ltd.	Samsung Electronics Egypt S.A.E	0.1
Samsung Electronics Maghreb Arab	Samsung Electronics Tunisia S.A.R.L	1.0
Harman Industries Holdings Mauritius Ltd.	Harman International (India) Private Limited	100.0
Global Symphony Technology Group Private Ltd.	Harman Connected Services Corp. India Pvt. Ltd.	98.4
Red Bend Ltd.	Red Bend Software Ltd.	100.0
Samsung Electronics Latinoamerica(Zona Libre), S. A.	Samsung Electronics Latinoamerica Miami, Inc.	100.0
Samsung Electronics Latinoamerica(Zona Libre), S. A.	Samsung Electronica Colombia S.A.	100.0
Samsung Electronics Latinoamerica(Zona Libre), S. A.	Samsung Electronics Panama. S.A.	100.0
Samsung Electronica da Amazonia Ltda.	Samsung Electronics Argentina S.A.	2.0
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	100.0
Samsung Electronics Central Eurasia LLP	Samsung Electronics Caucasus Co. Ltd	0.0
Samsung SDI	Intellectual Keystone Technology LLC	41.0
Samsung SDI	Samsung SDI Japan Co., Ltd.	89.2
Samsung SDI	Samsung SDI America, Inc.	91.7
Samsung SDI	Samsung SDI Hungary, Zrt.	100.0
Samsung SDI	Samsung SDI Europe GmbH	100.0
Samsung SDI	Samsung SDI Battery Systems GmbH	100.0
Samsung SDI	Samsung SDI Vietnam Co., Ltd.	100.0
Samsung SDI	Samsung SDI Energy Malaysia Sdn, Bhd.	100.0
Samsung SDI	Samsung SDI India Private Limited	100.0
Samsung SDI	Samsung SDI(Hong Kong) Ltd.	97.6
Samsung SDI	Samsung SDI China Co., Ltd.	100.0
Samsung SDI	Samsung SDI-ARN (Xi'An) Power Battery Co., Ltd.	65.0
Samsung SDI	Samsung SDI (Changchun) Power Battery Co., Ltd.	50.0
Samsung SDI	Samsung SDI (Tianjin) Battery Co., Ltd	80.0
Samsung SDI	Novald GmbH	50.1
Samsung SDI	SAMSUNG SDI WUXI CO.,LTD.	100.0
Samsung SDI	Samsung SDI(Wuxi) Battery Systems Co., Ltd.	50.0
Samsung SDI	iMarket Asia Co., Ltd.	8.7
Samsung SDI(Hong Kong) Ltd.	Samsung SDI India Private Limited	0.0

Investor	Investee	Ownership
Samsung SDI(Hong Kong) Ltd.	Tianjin Samsung SDI Co., Ltd.	80.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Japan Co., Ltd.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics America, Inc.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics GmbH	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics(Thailand) Co., Ltd.	75.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Philippines, Corp.	100.0
Samsung Electro-Mechanics	Calamba Premier Realty Corporation	39.8
Samsung Electro-Mechanics	Samsung Electro-Mechanics Pte Ltd.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Vietnam Co., Ltd.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Software India Bangalore Private Limited	99.9
Samsung Electro-Mechanics	Dongguan Samsung Electro-Mechanics Co., Ltd.	100.0
Samsung Electro-Mechanics	Tianjin Samsung Electro-Mechanics Co., Ltd.	81.8
Samsung Electro-Mechanics	Samsung High-Tech Electro-Mechanics(Tianjin) Co., Ltd.	95.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics (Shenzhen) Co., Ltd.	100.0
Samsung Electro-Mechanics	Kunshan Samsung Electro-Mechanics Co., Ltd.	100.0
Samsung Electro-Mechanics	iMarket Asia Co., Ltd.	8.7
Calamba Premier Realty Corporation	Batino Realty Corporation	100.0
Samsung Electro-Mechanics Pte Ltd.	Samsung Electro-Mechanics Software India Bangalore Private Limited	0.1
Samsung Fire & Marine Insurance	Samsung Fire & Marine Management Corporation	100.0
Samsung Fire & Marine Insurance	SAMSUNG FIRE & MARINE INSURANCE COMPANY OF EUROPE LTD.	100.0
Samsung Fire & Marine Insurance	PT. Asuransi Samsung Tugu	70.0
Samsung Fire & Marine Insurance	SAMSUNG VINA INSURANCE COMPANY LIMITED	75.0
Samsung Fire & Marine Insurance	Samsung Reinsurance Pte. Ltd.	100.0
Samsung Fire & Marine Insurance	Samsung Property & Casualty Insurance Company(China), Ltd	100.0
Samsung Fire & Marine Insurance	Samsung Fire & Marine Insurance Management Middle East Limited	100.0
Samsung Heavy Industries Co.,Ltd.	Camellia Consulting Corporation	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries India Pvt.Ltd.	100.0
Samsung Heavy Industries Co.,Ltd.	SAMSUNG HEAVY INDUSTRIES (M) SDN.BHD	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries(Ningbo) Co., Ltd	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries(Rongcheng) Co., Ltd	100.0
Samsung Heavy Industries Co.,Ltd.	Rongcheng Gaya Heavy Industries Co., Ltd	100.0
Samsung Heavy Industries Co.,Ltd.	SAMSUNG HEAVY INDUSTRIES NIGERIA LIMITED	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries Mozambique LDA	100.0
SAMSUNG HEAVY INDUSTRIES NIGERIA LIMITED	SHI - MCI FZE	70.0
Samsung Life Insurance	Porta Nuova Varesine Building 2 S.r.l.	51.0
Samsung Life Insurance	THAI SAMSUNG LIFE INSURANCE CO., LTD.	48.9
Samsung Life Insurance	Beijing Samsung Real Estate Co., Ltd	90.0
Samsung Asset Management	Samsung Asset Management (New York), Inc.	100.0
Samsung Asset Management	Samsung Global SME Private Equity Manager Fund Co., Ltd.	100.0
Samsung Asset Management	Samsung Asset Management(London) Ltd.	100.0
Samsung Asset Management	Samsung Private Equity Manager I Co., Ltd.	100.0
Samsung Asset Management	Samsung Asset Management (Hong Kong) Ltd.	100.0
Samsung Asset Management (Hong Kong) Ltd.	Samsung Asset Management (Beijing) Ltd.	100.0
CHEIL INDUSTRIES ITALY SRL	COLOMBO VIA DELLA SPIGA S.R.L	100.0
Samsung C&T Corporation	MYODO METAL CO., LTD.	100.0
Samsung C&T Corporation	Samsung C&T Japan Corporation	100.0
Samsung C&T Corporation	Samsung C&T America Inc.	100.0
Samsung C&T Corporation	Samsung E&C America, INC.	100.0
Samsung C&T Corporation	Samsung Renewable Energy Inc.	100.0
Samsung C&T Corporation	QSSC, S.A. de C.V.	60.0
Samsung C&T Corporation	Samsung C&T Oil & Gas Parallel Corp.	100.0
Samsung C&T Corporation	Samsung C&T Canada Ltd.	100.0
Samsung C&T Corporation	Samsung C&T Lima S.A.C.	100.0
Samsung C&T Corporation	Samsung C&T Deutschland GmbH	100.0
Samsung C&T Corporation	Samsung C&T U.K. Ltd.	100.0

Investor	Investee	Ownership
Samsung C&T Corporation	Samsung C&T ECUK Limited	100.0
Samsung C&T Corporation	Whessoe engineering Limited	100.0
Samsung C&T Corporation	POSS-SLPC, S.R.O	50.0
Samsung C&T Corporation	Solluce Romania 1 B.V.	80.0
Samsung C&T Corporation	SAM investment Manzanilo.B.V	53.3
Samsung C&T Corporation	Samsung C&T (KL) Sdn.,Bhd.	100.0
Samsung C&T Corporation	Samsung C&T Malaysia SDN. BHD	100.0
Samsung C&T Corporation	Erdsam Co., Ltd.	100.0
Samsung C&T Corporation	Samsung Chemtech Vina LLC	51.7
Samsung C&T Corporation	S-print Inc	40.0
Samsung C&T Corporation	Samsung C&T Thailand Co., Ltd	93.0
Samsung C&T Corporation	PT. INSAM BATUBARA ENERGY	90.0
Samsung C&T Corporation	Samsung E&C India Private Limited	100.0
Samsung C&T Corporation	Samsung C&T Corporation India Private Limited	100.0
Samsung C&T Corporation	Malaysia Samsung Steel Center Sdn.Bhd	70.0
Samsung C&T Corporation	Samsung C&T Singapore Pte., Ltd.	100.0
Samsung C&T Corporation	S&G Biofuel PTE.LTD	50.5
Samsung C&T Corporation	SAMSUNG C&T Mongolia LLC.	70.0
Samsung C&T Corporation	Samsung C&T Eng.&Const. Mongolia LLC.	100.0
Samsung C&T Corporation	S&WOO CONSTRUCTION PHILIPPINES,INC.	100.0
Samsung C&T Corporation	Samsung C&T Hongkong Ltd.	100.0
Samsung C&T Corporation	Samsung C&T Taiwan Co., Ltd.	100.0
Samsung C&T Corporation	Samsung Precision Stainless Steel(pinghu) Co.,Ltd.	55.0
Samsung C&T Corporation	SAMSUNG C&T (SHANGHAI) CO., LTD.	100.0
Samsung C&T Corporation	Samsung C&T (Xi'an) Co., Ltd.	100.0
Samsung C&T Corporation	SAMSUNG C&T CORPORATION SAUDI ARABIA	100.0
Samsung C&T Corporation	SAM Gulf Investment Limited	100.0
Samsung C&T Corporation	Samsung C&T Chile Copper SpA	100.0
Samsung C&T Corporation	SCNT Power Kelar Inversiones Limitada	100.0
Samsung C&T Corporation	Samsung C&T Corporation Rus LLC	100.0
Samsung C&T Corporation	Samsung SDI America, Inc.	8.3
Samsung C&T Corporation	Samsung SDI(Hong Kong) Ltd.	2.4
Samsung C&T Corporation	Beijing Samsung Real Estate Co.. Ltd	10.0
Samsung C&T Corporation	Cheil Industries Corp., USA	100.0
Samsung C&T Corporation	CHEIL INDUSTRIES ITALY SRL	100.0
Samsung C&T Corporation	Samsung Fashion Trading Co.,Ltd	100.0
Samsung C&T Corporation	CHEIL INDUSTRIES INC. VIETNAM COMPANY LIMITED	100.0
Samsung C&T Corporation	Samsung C&T Corporation UEM Construction JV Sdn Bhd	60.0
Samsung C&T Corporation	iMarket Asia Co., Ltd.	19.3
Samsung Welstory	WELSTORY VIETNAM COMPANY LIMITED	90.0
Samsung Welstory	Shanghai Ever-Hongjun Business Mgt Service Co.,LTD	85.0
Samsung Welstory	Shanghai Welstory Food Company Limited	81.6
MULTICAMPUS	LANGUAGE TESTING INTERNATIONAL, INC.	82.4
Pengtai Greater China Company Limited	PENGTAI CHINA CO.,LTD.	100.0
Pengtai Greater China Company Limited	PengTai Taiwan Co., Ltd.	100.0
Pengtai Greater China Company Limited	PENGTAI INTERACTIVE ADVERTISING CO.,LTD	100.0
PENGTAI CHINA CO.,LTD.	PENGTAI E-COMMERCE CO.,LTD	100.0
PENGTAI CHINA CO.,LTD.	PENGTAI MARKETING SERVICE CO.,LTD.	100.0
PENGTAI INTERACTIVE ADVERTISING CO.,LTD	Medialytics Inc.	100.0
PENGTAI INTERACTIVE ADVERTISING CO.,LTD	Beijing Pengtai Baozun E-commerce Co., Ltd.	51.0
iMarket Asia Co., Ltd.	iMarket China Co., Ltd.	80.0
Samsung Securities	Samsung Securities (America), Inc.	100.0
Samsung Securities	Samsung Securities (Europe) Limited.	100.0
Samsung Securities	Samsung Securities (Asia) Limited.	100.0
Samsung SDS	iMarket Asia Co., Ltd.	40.6

Investor	Investee	Ownership
Samsung SDS	Samsung SDS Global SCL America, Inc.	100.0
Samsung SDS	SAMSUNG SDS GSCL CANADA., LTD.	100.0
Samsung SDS	Samsung SDS America, Inc.	100.0
Samsung SDS	Neo EXpress Transportation (NEXT), Inc.	51.0
Samsung SDS	Samsung SDS Europe Ltd.	100.0
Samsung SDS	Samsung SDS Global SCL Hungary Kft.	100.0
Samsung SDS	Samsung SDS Global SCL Slovakia, s.r.o.	100.0
Samsung SDS	Samsung SDS Global SCL Poland Sp. Z.o.o.	100.0
Samsung SDS	Samsung GSCL Sweden AB	100.0
Samsung SDS	Samsung SDS Global SCL France SAS	100.0
Samsung SDS	Samsung SDS Global SCL Greece Societe Anonyme	100.0
Samsung SDS	Samsung SDS Global SCL Baltics, SIA	100.0
Samsung SDS	Samsung SDS Global SCL Italy S.R.L. A Socio Unico	100.0
Samsung SDS	Samsung SDS Global Supply Chain Logistics Spain S.L.U	100.0
Samsung SDS	Samsung SDS Global SCL Netherlands Cooperatief U.A	100.0
Samsung SDS	Samsung SDS Global SCL Germany GmbH	100.0
Samsung SDS	Samsung SDS Global SCL Austria GmbH	100.0
Samsung SDS	Samsung SDS GSCL Romania SRL	100.0
Samsung SDS	Samsung SDS Asia Pacific Pte. Ltd.	100.0
Samsung SDS	Samsung Data Systems India Private Limited	100.0
Samsung SDS	Samsung SDS India Private Limited	100.0
Samsung SDS	VASCO SUPPLY CHAIN SOLUTIONS PRIVATE LIMITED	51.0
Samsung SDS	Samsung SDS Vietnam Co., Ltd.	100.0
Samsung SDS	PT. Samsung SDS Global SCL Indonesia	100.0
Samsung SDS	Samsung SDS Global SCL Philippines Co., Ltd.	100.0
Samsung SDS	Samsung SDS Global SCL Thailand Co.,Ltd	100.0
Samsung SDS	Samsung SDS Global SCL Malaysia SDN.BHD.	100.0
Samsung SDS	SAMSUNG SDS GLOBAL SCL AUSTRALIA PTY., LTD.	100.0
Samsung SDS	SDS-ACUTECH CO., LTD	50.0
Samsung SDS	ALS SDS Joint Stock Company	51.0
Samsung SDS	SDS-MP LOGISTICS JOINT STOCK COMPANY	51.0
Samsung SDS	Samsung SDS China Co., Ltd.	100.0
Samsung SDS	Samsung IT Services (Beijing) Co., Ltd.	100.0
Samsung SDS	Samsung SDS Global SCL Hong Kong Ltd	100.0
Samsung SDS	SAMSUNG SDS Global SCL Egypt Co. Ltd.	100.0
Samsung SDS	Samsung SDS Global SCL South Africa (PTY) Ltd.	100.0
Samsung SDS	Samsung SDS Global SCL Transport and Logistics Joint Stock Company	100.0
Samsung SDS	Samsung SDS Global Supply Chain Logistics Middle East DWC-LLC	100.0
Samsung SDS	Samsung SDS Latin America Solucoes Em Tecnologia Ltda	99.7
Samsung SDS	SAMSUNG SDS GLOBAL SCL LATIN AMERICA LOGISTICA LTD	99.7
Samsung SDS	Inte-SDS Logistics, S.A de C.V.	51.0
Samsung SDS	Samsung SDS Global SCL Rus Limited Liability Company	100.0
Miracom	MIRACOM INC ASIA PACIFIC LIMITED	100.0
Samsung SDS Global SCL America, Inc.	Samsung SDS Latin America Solucoes Em Tecnologia Ltda	0.3
Samsung SDS Global SCL America, Inc.	Samsung SDS Mexico, S.A. DE C.V.	99.0
Samsung SDS Global SCL America, Inc.	Samsung SDS Global SCL Panama S. A.	100.0
Samsung SDS Global SCL America, Inc.	Samsung SDS Global SCL Chile Limitada	100.0
Samsung SDS Global SCL America, Inc.	Samsung SDS Global SCL Peru S.A.C.	100.0
Samsung SDS Global SCL America, Inc.	Samsung SDS Global SCL Colombia S.A.S.	100.0
Samsung SDS Global SCL America, Inc.	SAMSUNG SDS GLOBAL SCL LATIN AMERICA LOGISTICA LTD	0.3
Samsung SDS Europe Ltd.	Samsung SDS Global SCL Netherlands Cooperatief U.A	0.0
Samsung SDS Global SCL Netherlands Cooperatief U.A	Samsung SDS Global SCL Poland Sp. Z.o.o.	0.0
Samsung SDS Global SCL Netherlands Cooperatief U.A	Samsung SDS Global SCL Greece Societe Anonyme	0.0
Samsung SDS Global SCL Netherlands Cooperatief U.A	Samsung SDS GSCL Romania SRL	0.0
Samsung SDS Global SCL Netherlands Cooperatief U.A	Samsung SDS Global SCL Rus Limited Liability Company	0.0

Investor	Investee	Ownership
Samsung SDS China Co., Ltd.	Samsung SDS Global SCL Beijing Co., Ltd	100.0
Samsung IT Services (Beijing) Co., Ltd.	Samsung SDS Global Development Center Xi'an	100.0
Samsung Engineering	Samsung Engineering America Inc.	100.0
Samsung Engineering	Samsung Engineering Hungary Ltd.	100.0
Samsung Engineering	Samsung Engineering Italy S.R.L.	100.0
Samsung Engineering	Samsung Engineering (Malaysia) SDN. BHD.	100.0
Samsung Engineering	PT Samsung Engineering Indonesia Co., Ltd.	100.0
Samsung Engineering	Samsung Engineering (Thailand) Co., Ltd.	81.0
Samsung Engineering	Samsung Engineering India Private Limited	100.0
Samsung Engineering	Samsung Engineering Vietnam Co., Ltd.	100.0
Samsung Engineering	Samsung Engineering Construction(Shanghai) Co., Ltd	100.0
Samsung Engineering	Samsung Engineering Construction Xi'an Co., Ltd.	100.0
Samsung Engineering	Samsung Saudi Arabia Co., Ltd.	100.0
Samsung Engineering	Muharrag Wastewater Services Company W.L.L.	99.8
Samsung Engineering	Muharrag STP Company B.S.C.	6.6
Samsung Engineering	Muharrag Holding Company 1 Ltd.	65.0
Samsung Engineering	Samsung Ingenieria Mexico Construccion Y Operacion S.A. De C.V.	99.9
Samsung Engineering	Samsung Engineering Trinidad Co., Ltd.	100.0
Samsung Engineering	Samsung Ingenieria Manzanillo, S.A. De C.V.	99.9
Samsung Engineering	Grupo Samsung Ingenieria Mexico, S.A. De C.V.	100.0
Samsung Engineering	Samsung Ingenieria Energia S.A. De C.V.	100.0
Samsung Engineering	Samsung Engineering Bolivia S.A	100.0
Samsung Engineering	Samsung Ingenieria DUBA S.A. de C.V.	100.0
Samsung Engineering	Samsung Engineering Kazakhstan L.L.P.	100.0
Samsung Engineering America Inc.	SEA Construction, LLC	100.0
Samsung Engineering America Inc.	SEA Louisiana Construction, L.L.C.	100.0
Samsung Engineering (Malaysia) SDN. BHD.	Muharrag Wastewater Services Company W.L.L.	0.3
Samsung Engineering India Private Limited	Samsung Saudi Arabia Co., Ltd.	0.0
Samsung Saudi Arabia Co., Ltd.	Samsung EPC Company Ltd.	75.0
Muharrag Holding Company 1 Ltd.	Muharrag Holding Company 2 Ltd.	100.0
Muharrag Holding Company 2 Ltd.	Muharrag STP Company B.S.C.	89.9
S1 Corporation	S-1 CORPORATION HUNGARY LLC	100.0
S1 Corporation	SOCM LLC	100.0
S1 Corporation	S-1 CORPORATION VIETNAM CO., LTD	100.0
S1 Corporation	Samsung Beijing Security Systems	100.0
Cheil Worldwide	Cheil USA Inc.	100.0
Cheil Worldwide	Cheil Central America Inc.	100.0
Cheil Worldwide	Iris Worldwide Holdings Limited	100.0
Cheil Worldwide	CHEIL EUROPE LIMITED	100.0
Cheil Worldwide	Cheil Germany GmbH	100.0
Cheil Worldwide	Cheil France SAS	100.0
Cheil Worldwide	CHEIL SPAIN S.L	100.0
Cheil Worldwide	Cheil Benelux B.V.	100.0
Cheil Worldwide	Cheil Nordic AB	100.0
Cheil Worldwide	Cheil India Private Limited	100.0
Cheil Worldwide	Cheil (Thailand) Ltd.	100.0
Cheil Worldwide	Cheil Singapore Pte. Ltd.	100.0
Cheil Worldwide	CHEIL VIETNAM COMPANY LIMITED	99.0
Cheil Worldwide	Cheil Integrated Marketing Philippines, Inc.	100.0
Cheil Worldwide	CHEIL MALAYSIA SDN. BHD.	100.0
Cheil Worldwide	CHEIL CHINA	100.0
Cheil Worldwide	Cheil Hong Kong Ltd.	100.0
Cheil Worldwide	Caishu (Shanghai) Business Consulting Co., Ltd	100.0
Cheil Worldwide	Cheil MEA FZ-LLC	100.0
Cheil Worldwide	Cheil South Africa (Pty) Ltd	100.0

Investor	Investee	Ownership
Cheil Worldwide	CHEIL KENYA LIMITED	99.0
Cheil Worldwide	Cheil Communications Nigeria Ltd.	99.0
Cheil Worldwide	Cheil Worldwide Inc./Jordan LLC.	100.0
Cheil Worldwide	Cheil Ghana Limited	100.0
Cheil Worldwide	Cheil Egypt LLC	99.9
Cheil Worldwide	Cheil Brasil Comunicacoes Ltda.	100.0
Cheil Worldwide	Cheil Mexico, S.A. de C.V.	98.0
Cheil Worldwide	Cheil Chile SpA.	100.0
Cheil Worldwide	Cheil Peru S.A.C.	100.0
Cheil Worldwide	CHEIL ARGENTINA S.A.	98.0
Cheil Worldwide	Cheil Rus LLC	100.0
Cheil Worldwide	Cheil Ukraine LLC	100.0
Cheil Worldwide	Cheil Kazakhstan LLC	100.0
Hotel Shilla	Samsung Hospitality America Inc.	100.0
Hotel Shilla	Shilla Travel Retail Pte. Ltd.	100.0
Hotel Shilla	Samsung Shilla Business Service Beijing Co., Ltd.	100.0
Hotel Shilla	Shilla Travel Retail Hong Kong Limited	100.0
Hotel Shilla	Shilla Travel Retail Taiwan Limited	64.0
HDC Shilla Duty Free LTD	HDC SHILLA (SHANGHAI) CO., LTD	100.0
SBTM	Samsung Hospitality U.K. Inc.	100.0
SBTM	Samsung Hospitality Europe GmbH	100.0
SBTM	SAMSUNG HOSPITALITY ROMANIA SRL	100.0
SBTM	Samsung Hospitality Vietnam Co., Ltd.	99.0
SBTM	Samsung Hospitality Philippines Inc.	100.0
SBTM	Samsung Hospitality India Private Limited	100.0
Iris Americas, Inc.	Iris (USA) Inc.	100.0
Iris Americas, Inc.	Iris Atlanta, Inc.	100.0
Iris Americas, Inc.	Iris Experience, Inc.	100.0
Iris Americas, Inc.	Iris Latin America, Inc.	100.0
Iris Americas, Inc.	Iris Worldwide San Diego, Inc.	100.0
Iris Americas, Inc.	89 Degrees, Inc.	100.0
Iris Latin America, Inc.	Irisnation Latina No.2, S. de R.L. de C.V.	0.0
Iris Latin America, Inc.	Irisnation Latina, S. de R.L. de C.V.	0.0
Iris Canada Holdings Ltd	Pricing Solutions Ltd	100.0
Cheil USA Inc.	The Barbarian Group LLC	100.0
Cheil USA Inc.	McKinney Ventures LLC	100.0
Cheil USA Inc.	Cheil India Private Limited	0.0
Cheil USA Inc.	Cheil Mexico, S.A. de C.V.	2.0
Iris Worldwide Holdings Limited	Iris Nation Worldwide Limited	100.0
Iris Worldwide Holdings Limited	Josh & James Limited	100.0
Iris Nation Worldwide Limited	Iris Americas, Inc.	100.0
Iris Nation Worldwide Limited	Irisnation Latina No.2, S. de R.L. de C.V.	100.0
Iris Nation Worldwide Limited	Irisnation Latina, S. de R.L. de C.V.	100.0
Iris Nation Worldwide Limited	Iris Canada Holdings Ltd	100.0
Iris Nation Worldwide Limited	Iris London Limited	100.0
Iris Nation Worldwide Limited	Iris Promotional Marketing Ltd	100.0
Iris Nation Worldwide Limited	Iris Ventures 1 Limited	98.6
Iris Nation Worldwide Limited	Founded Partners Limited	100.0
Iris Nation Worldwide Limited	Iris Products (Worldwide) Limited	100.0
Iris Nation Worldwide Limited	Iris Korea Limited	100.0
Iris Nation Worldwide Limited	Iris PR Limited	100.0
Iris Nation Worldwide Limited	Iris Concise Limited	100.0
Iris Nation Worldwide Limited	Iris Digital Limited	100.0
Iris Nation Worldwide Limited	Iris Amsterdam B.V.	100.0
Iris Nation Worldwide Limited	Datalytics Limited	100.0

Investor	Investee	Ownership
Iris Nation Worldwide Limited	Iris Ventures (Worldwide) Limited	100.0
Iris Nation Worldwide Limited	Iris Culture Limited	100.0
Iris Nation Worldwide Limited	Concise Consultants Limited	100.0
Iris Nation Worldwide Limited	Atom42 Ltd	100.0
Iris Nation Worldwide Limited	WDMP Limited	49.0
Iris Nation Worldwide Limited	Pricing Solutions (UK) Limited	100.0
Iris Nation Worldwide Limited	Iris Services Limited Doel Skopje	100.0
Iris Nation Worldwide Limited	Irisnation Singapore Pte. Ltd.	100.0
Iris Nation Worldwide Limited	Iris Worldwide Integrated Marketing Private Limited	100.0
Iris Nation Worldwide Limited	Iris Sydney PTY Ltd	100.0
Iris Nation Worldwide Limited	Iris Worldwide (Thailand) Limited	100.0
Iris Nation Worldwide Limited	Iris Beijing Advertising Company Limited	100.0
Iris Nation Worldwide Limited	Irisnation Hong Kong Limited	100.0
Iris London Limited	Iris Partners LLP	100.0
Iris Promotional Marketing Ltd	Holdings BR185 Limited	100.0
Iris Ventures 1 Limited	Iris Germany GmbH	100.0
Founded Partners Limited	Founded, Inc.	100.0
Iris Ventures (Worldwide) Limited	Fixers Group B.V.	49.0
Iris Germany GmbH	Pepper NA, Inc.	100.0
Iris Germany GmbH	Pepper Technologies Pte. Ltd.	100.0
CHEIL EUROPE LIMITED	Beattie McGuinness Bungay Limited	100.0
CHEIL EUROPE LIMITED	Cheil Italia S.r.l	100.0
Cheil Germany GmbH	Cheil Austria GmbH	100.0
Cheil Germany GmbH	Centrade Integrated SRL	80.0
Centrade Integrated SRL	Centrade Cheil HU Kft.	100.0
Centrade Integrated SRL	Centrade Cheil Adriatic D.O.O.	100.0
Cheil India Private Limited	Experience Commerce Software Private Limited	100.0
Cheil Singapore Pte. Ltd.	Pengtai Greater China Company Limited	95.7
Cheil Singapore Pte. Ltd.	PT. CHEIL WORLDWIDE INDONESIA	100.0
Cheil Integrated Marketing Philippines, Inc.	Cheil Philippines Inc.	30.0
Cheil Hong Kong Ltd.	Pengtai Greater China Company Limited	3.1
Samsung Shilla Business Service Beijing Co., Ltd.	Tianjin Samsung International Travel Service Co., Ltd	100.0
Shilla Travel Retail Hong Kong Limited	Shilla Retail Limited	100.0
Shilla Travel Retail Hong Kong Limited	Shilla Travel Retail Duty Free HK Limited	100.0
Cheil MEA FZ-LLC	One Agency FZ-LLC	100.0
Cheil MEA FZ-LLC	One RX Project Management Design and Production Limited Company	0.0
Cheil MEA FZ-LLC	Cheil Egypt LLC	0.1
Cheil South Africa (Pty) Ltd	CHEIL KENYA LIMITED	1.0
Cheil South Africa (Pty) Ltd	Cheil Communications Nigeria Ltd.	1.0
One Agency FZ-LLC	One RX India Private Limited	100.0
One Agency FZ-LLC	One RX Project Management Design and Production Limited Company	100.0
One Agency FZ-LLC	ONE RX INTERIOR DECORATION L.L.C	100.0
One Agency FZ-LLC	ONE AGENCY PRINTING L.L.C	100.0
One Agency FZ-LLC	One Agency South Africa (Pty) Ltd	100.0
ONE RX INTERIOR DECORATION L.L.C	One RX India Private Limited	0.0
Holdings BR185 Limited	Brazil 185 Participacoes Ltda	100.0
Brazil 185 Participacoes Ltda	Iris Router Marketing Ltda	100.0
Cheil Brasil Comunicacoes Ltda.	CHEIL ARGENTINA S.A.	2.0

Percent of ownership as of June 30, 2020 based on common shares

C. Related statute & regulation

Restrictions on cross-holdings within Samsung Group in accordance with the Monopoly Regulation and Fair Trade Act

(1) Date of announcement by authorities of companies deemed Samsung Group companies for the current year:
May 1, 2020

(2) Summary of Regulation

- Restriction on cross-holdings
- Restriction on debt guarantee between affiliates
- Restriction on affiliate voting rights of financial & insurance companies
- Decision making of board committee and public disclosure of large-scale inter-affiliate transactions
- Public disclosure of important matters of unlisted companies
- Other public disclosures related to Group status

D. Concurrent position with other affiliates

[As of June 30, 2020]

		Concurrent position		
Name	Position	Name of company	Position	Full/part time
Hark-kyu Park	President	Samsung Display	Non-Executive director	Part time
Yong-kwan Kim	Executive VP	Samsung Medison	Representative Director	Full time
Yeon-sung Kim	Senior VP	Samsung Electronics Logitech	Auditor	Part time
		Samsung Electronics Sales	Auditor	Part time
		Samsung Electronics Service	Auditor	Part time
Sung-won Son	Senior VP	Samsung Medison	Auditor	Part time
Khi-jae Cho	Senior VP	Samsung Display	Auditor	Part time
Sung-woo Shin	VP	STECO	Auditor	Part time
Chong-hoon Oh	VP	SEMES	Auditor	Part time
Won-joon Lee	VP	SERI	Auditor	Part time
Byeong-seong Kim	VP	Samsung Medison	Executive director	Full time
Hong-sig Kim	VP	SEMES	Non-Executive director	Part time
Hyun-jung Park	VP	SEMES	Non-Executive director	Part time
Hyung-joon Moon	VP	STECO	Non-Executive director	Part time
Sung-wuk Kang	VP	Samsung Venture Investment	Auditor	Part time

E. Equity investments in other corporations

(1) The total book value of equity investments in other corporations as of June 30, 2020 is KRW 57,706 billion (for the purpose of business operations, etc.)

[As of June 30, 2020]

(1,000 shares, KRW million, %)

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Listed	Samsung Electro-Mechanics	1977.01	Business	250	17,693	23.7	445,244	-	-	-	17,693	23.7	445,244	8,674,248	528,049
Unlisted	STECO	1995.06	Business	24,000	2,590	70.0	35,861	-	-	-	2,590	70.0	35,861	169,173	8,337
Unlisted	SEMES	1992.12	Business	1,000	2,173	91.5	71,906	-	-	-	2,173	91.5	71,906	1,335,871	31,409
Unlisted	SERI	1991.05	Business	320	3,576	29.8	24,942	-	-	-	3,576	29.8	24,942	128,925	225
Listed	Samsung SDS	1992.07	Business	6,160	17,472	22.6	560,827	-	-	-	17,472	22.6	560,827	9,021,236	750,449
Unlisted	Samsung Electronics Service	1998.01	Business	30,000	6,000	99.3	48,121	-	-	-	6,000	99.3	48,121	445,898	1,364
Unlisted	Samsung Electronics Sales	2000.12	Business	3,100	1,767	100.0	247,523	-	-	-	1,767	100	247,523	1,061,489	4,755
Unlisted	Samsung Electronics Logitech	1999.04	Business	76	1,011	100.0	46,669	-	-	-	1,011	100	46,669	218,240	10,899
Unlisted	Samsung Display	2012.04	Business	16,009,547	221,969	84.8	18,509,307	-	-	-	221,969	84.8	18,509,307	46,543,974	407,791
Unlisted	SVIC #21	2011.11	Business	19,800	1	99.0	75,982	(0)	3,457	-	1	99.0	79,439	95,135	19,691
Unlisted	SVIC #22	2011.11	Business	19,800	1	99.0	114,216	(0)	(20,592)	-	1	99.0	93,624	119,689	2,131
Unlisted	SVIC #26	2014.11	Business	19,800	2	99.0	164,211	-	-	-	2	99.0	164,211	134,421	(63,401)
Unlisted	SVIC #27	2014.09	Business	5,940	0	99.0	37,600	0	3,044	-	0	99.0	40,644	42,486	3,873

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SVIC #28	2015.02	Business	7,425	2	99.0	157,992	0	7,647	-	2	99.0	165,639	322,277	107,724
Unlisted	SVIC #32	2016.08	Business	19,800	2	99.0	183,477	(0)	(871)	-	2	99.0	182,606	227,750	46,897
Unlisted	SVIC #33	2016.11	Business	4,950	2	99.0	155,299	-	-	-	2	99.0	155,299	188,559	26,412
Unlisted	SVIC #42	2018.11	Business	4,950	0	99.0	5,900	0	5,148	-	0	99.0	11,048	4,939	(1,232)
Unlisted	SVIC #45	2019.05	Business	19,800	0	99.0	20,790	1	42,870	-	1	99.0	63,660	19,097	(3,169)
Unlisted	Samsung Medison	2011.02	Business	286,384	87,350	68.5	326,785	-	-	-	87,350	68.5	326,785	361,483	8,975
Listed	Samsung BioLogics	2011.04	Business	30,000	20,837	31.5	443,193	-	-	-	20,837	31.5	443,193	5,911,627	202,904
Unlisted	Intellectual Discovery	2011.05	Business	5,000	357	10.7	1,922	-	-	-	357	10.7	1,922	48,746	8,366
Listed	Samsung Heavy Industries	1977.09	Business	125	100,693	16.0	732,041	-	-	(132,915)	100,693	16.0	599,126	13,600,084	(1,315,353)
Listed	Hotel Shilla	1979.12	Business	252	2,005	5.1	182,028	-	-	(39,693)	2,005	5.1	142,335	3,527,281	169,428
Listed	Cheil Worldwide	1988.09	Business	185	29,038	25.2	491,599	-	-	-	29,038	25.2	491,599	2,252,767	139,453
Listed	A-Tech Solution	2009.11	Business	26,348	1,592	15.9	11,733	-	-	701	1,592	15.9	12,434	188,964	1,546
Listed	iMarket Korea	2000.12	Business	1,900	647	1.8	6,732	-	-	(1,094)	647	1.8	5,638	1,096,877	25,788
Listed	KT Skylife	2001.12	Business	3,344	240	0.5	2,093	-	-	(190)	240	0.5	1,903	848,276	56,008
Listed	Samsung SDI	1977.01	Business	304	13,463	19.6	1,242,605	-	-	-	13,463	19.6	1,242,605	19,852,096	402,366
Listed	Wonik IPS	2016.04	Business	16,214	1,851	3.8	66,356	-	-	(370)	1,851	3.8	65,986	899,162	42,863
Listed	Wonik Holdings	2013.12	Business	15,411	1,759	2.3	9,605	-	-	(1,654)	1,759	2.3	7,951	1,225,200	48,982

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Ownership (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Listed	Dongjin Semichem	2017.11	Business	48,277	2,468	4.8	41,337	-	-	28,134	2,468	4.8	69,471	840,711	58,693
Listed	Soulbrain Holdings	2017.11	Business	55,618	835	4.8	70,400	-	-	9,687	835	4.8	80,087	1,159,460	119,291
Unlisted	Korea Business Banking	1995.01	Business	5,000	1,000	17.2	3,331	-	-	(220)	1,000	17.2	3,111	84,819	1,273
Unlisted	The Korea Economic Daily	1987.05	Business	150	72	0.4	365	-	-	-	72	0.4	365	499,201	38,510
Unlisted	Samsung Venture Investment	1999.11	Business	4,900	980	16.3	12,754	-	-	640	980	16.3	13,394	133,153	11,589
Unlisted	Cyber Bank	2000.12	Business	8,000	1,083	7.5	0	-	-	-	1,083	7.5	0	0	0
Unlisted	FineChips	2001.12	Business	10	2	3.2	10	-	-	-	2	3.2	10	9,575	2,084
Unlisted	Inkel	2006.11	Business	130	0	0.0	0	-	-	-	0	0.0	0	87,056	(15,730)
Listed	Yongpyong Resort	2007.05	Business	1,869	400	0.8	2,400	-	-	(780)	400	0.8	1,620	849,936	(13,792)
Unlisted	Sambo Computer	2012.09	Withdrawal	0	0	0.0	0	-	-	-	0	0.0	0	42,868	5,560
Unlisted	Icube #1	2009.12	Business	4,000	0	0.0	0	-	-	-	0	0.0	0	0	0
Unlisted	Shinsung Eng & Construction	2010.07	Withdrawal	1	0	0.0	0	-	-	-	0	0.0	0	231,008	(19,693)
Unlisted	Woobang	2010.07	Withdrawal	0	1	0.0	0	-	-	-	1	0.0	0	593,687	17,822
Unlisted	Daewoo Development	2012.12	Withdrawal	0	0	0.0	0	-	-	-	0	0.0	0	268,251	10,610
Unlisted	Daewoo Songdo Development	2012.12	Withdrawal	0	9	0.0	0	-	-	-	9	0.0	0	19,367	(350)

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	Zyle Motor Sales	2012.12	Withdrawal	0	1	0	0	-	-	-	1	0.0	0	224,257	2,247
Unlisted	Sungwon Construction	2014.04	Withdrawal	0	1	0	0	-	-	-	1	0.0	0	27,744	(627)
Unlisted	Inhee	2014.04	Withdrawal	0	0	0.1	0	-	-	-	0	0.1	0	2,972	(6,039)
Unlisted	B&B Systems	2019.12	Withdrawal	61	12	3.5	61	-	-	-	12	3.5	61	761	(3,016)
Unlisted	Semiconductor Growth Fund	2017.03	Business	500	50,000,000	66.7	50,000	-	-	-	50,000,000	66.7	50,000	75,397	134
Unlisted	System LSI Mutual benefit private equity trust	2020.04	Business	25,000	0	0	0	25,000,000	25,000	-	25,000,000	62.5	25,000	0	0
Unlisted	JNT	2011.02	Business	1,800	0	24.0	1,758	-	-	-	0	24.0	1,758	4,839	(359)
Unlisted	Daishin Aju IB	2011.08	Business	258	0	3.0	681	-	-	-	0	3.0	681	13,151	(1,667)
Unlisted	TS	2011.11	Business	1,700	0	20.5	0	-	-	-	0	20.5	0	3,807	265
Unlisted	L&S	2012.07	Business	848	0	7.5	384	-	-	-	0	7.5	384	5,259	6,706
Unlisted	Maltani Corp.	2012.04	Business	16,544	45	15.0	9,551	-	-	(27)	45	15.0	9,524	74,750	2,087
Unlisted	Pantech	2013.06	Business	53,000	53,000	10.0	0	-	-	-	53,000	10.0	0	58,926	(254)
Unlisted	KTCNP-GC	2013.12	Business	960	0	3.6	1,816	-	-	-	0	3.6	1,816	120,821	(116,522)
Unlisted	POSCO Social Enterprise Fund	2013.12	Business	600	0	10.0	240	-	-	-	0	10.0	240	2,353	989
Unlisted	AI Research Institute	2016.07	Business	3,000	600	14.3	3,000	-	-	-	600	14.3	3,000	15,273	(1,810)
Unlisted	SECA	1992.08	Position Security	3,823	0	100	90,922	-	-	-	0	100	90,922	1,396,008	34,228
Unlisted	SEA	1978.07	Position Security	59,362	492	100	17,166,557	-	-	-	492	100	17,166,557	34,704,039	1,127,719

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Ownership (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Ownership (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SELA	1989.04	Position Security	319	40	100.0	86,962	-	-	-	40	100	86,962	489,412	28,864
Unlisted	SEM	1995.07	Position Security	3,032	3,837	63.6	165,638	-	-	-	3,837	63.6	165,638	1,250,456	91,050
Unlisted	SEASA	1996.06	Position Security	4,696	21,854	98.0	6,779	-	-	-	21,854	98.0	6,779	46,405	10,088
Unlisted	SEDA	1994.01	Position Security	13,224	77,205,709	87.0	647,620	-	-	-	77,205,709	87.0	647,620	7,058,719	887,298
Unlisted	SECH	2002.12	Position Security	597	0	4.1	597	-	-	-	0	4.1	597	497,328	25,835
Unlisted	SESA	1989.01	Position Security	3,276	8,021	100.0	142,091	-	-	-	8,021	100	142,091	1,117,384	36,853
Unlisted	SENA	1992.03	Position Security	392	1,000	100.0	69,372	-	-	-	1,000	100	69,372	1,246,502	52,822
Unlisted	SEH	1991.05	Position Security	1,954	753	100.0	650,157	-	-	-	753	100	650,157	2,109,654	106,704
Unlisted	SEP	1982.09	Position Security	204	1,751	100.0	37,616	-	-	-	1,751	100	37,616	212,856	6,957
Unlisted	SEF	1991.08	Position Security	230	2,700	100.0	234,115	-	-	-	2,700	100	234,115	1,738,061	53,708
Unlisted	SEUK	1995.07	Position Security	33,908	109,546	100.0	433,202	-	-	-	109,546	100	433,202	2,644,358	104,741
Unlisted	SEHG	1982.02	Position Security	28,042	0	100.0	354,846	-	-	-	0	100	354,846	844,742	82,940
Unlisted	SEAG	2002.01	Position Security	40	0	100.0	32,162	-	-	-	0	100	32,162	423,105	20,229
Unlisted	SEI	1993.05	Position Security	862	677	100.0	143,181	-	-	-	677	100	143,181	1,310,500	46,911
Unlisted	SEBN	1995.07	Position Security	236	539,138	100.0	914,751	-	-	-	539,138	100	914,751	1,914,864	39,175

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Ownership (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Ownership (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SELS	1991.05	Position Security	18,314	1,306	100	24,288	-	-	-	1,306	100	24,288	2,027,213	6,531
Unlisted	SEPOL	1996.04	Position Security	5,462	106	100	78,267	-	-	-	106	100	78,267	909,905	47,279
Unlisted	SSA	1998.12	Position Security	263	2,000	100	32,622	-	-	-	2,000	100	32,622	522,382	37,925
Unlisted	SESK	2002.06	Position Security	8,976	0	55.7	263,767	-	-	-	0	55.7	263,767	1,324,355	67,631
Unlisted	SEEH	2008.01	Position Security	4,214	0	100	1,369,992	-	-	-	0	100	1,369,992	10,682,847	21,915
Unlisted	SEO	1997.01	Position Security	120	0	100	(10,043)	-	-	-	0	100	(10,043)	138,325	(208)
Unlisted	SERC	2006.01	Position Security	24,877	0	100	188,290	-	-	-	0	100	188,290	1,460,307	76,385
Unlisted	SERK	2007.07	Position Security	4,600	0	100	204,555	-	-	-	0	100	204,555	1,259,052	160,049
Unlisted	SEAU	1987.11	Position Security	392	53,200	100	111,964	-	-	-	53,200	100	111,964	468,812	32,001
Unlisted	SEMA	1989.09	Position Security	4,378	16,247	100	103,402	-	-	-	16,247	100	103,402	189,418	19,563
Unlisted	SGE	1995.05	Position Security	827	0	100	32,836	-	-	-	0	100	32,836	1,017,534	(28,436)
Unlisted	SEEG	2012.07	Position Security	23	0	0.1	39	-	-	-	0	0.1	39	642,091	98,488
Unlisted	SEIN	1991.08	Position Security	7,463	46	100	118,909	-	-	-	46	100	118,909	1,014,085	14,243
Unlisted	SDMA	1995.03	Position Security	21,876	71,400	75.0	18,741	-	-	-	71,400	75.0	18,741	25,824	208
Unlisted	SIEL	1995.08	Position Security	5,414	216,787	100	75,263	-	-	-	216,787	100	75,263	7,042,872	448,678

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Ownership (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Ownership (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SRI-B	2005.05	Position Security	7,358	17	100	31,787	-	-	-	17	100	31,787	383,411	35,605
Unlisted	SAVINA	1995.01	Position Security	5,839	0	100	28,365	-	-	-	0	100	28,365	292,458	31,012
Unlisted	TSE	1988.01	Position Security	1,390	11,020	91.8	279,163	-	-	-	11,020	91.8	279,163	2,912,731	144,087
Unlisted	STE	1996.01	Position Security	4,206	2	49.0	0	-	-	-	2	49.0	0	6,609	0
Unlisted	SME	2003.05	Position Security	4,796	17,100	100	7,644	-	-	-	17,100	100	7,644	412,503	24,249
Unlisted	SAPL	2006.07	Position Security	793	877,133	100	981,483	-	-	-	877,133	100	981,483	9,137,262	1,265,359
Unlisted	SEHK	1988.09	Position Security	349	274,250	100	79,033	-	-	-	274,250	100	79,033	1,173,330	35,374
Unlisted	SET	1994.11	Position Security	456	27,270	100	112,949	-	-	-	27,270	100	112,949	1,186,764	27,757
Unlisted	SESS	1994.12	Position Security	18,875	0	100	504,313	-	-	-	0	100	504,313	1,094,799	74,005
Unlisted	SCIC	1996.03	Position Security	23,253	0	100	640,452	-	-	-	0	100	640,452	14,637,222	581,115
Unlisted	SEHZ	1992.12	Position Security	792	0	89.6	255,535	-	-	-	0	89.6	255,535	1,364,967	(52,492)
Unlisted	SSEC	1995.04	Position Security	32,128	0	69.1	130,551	-	-	-	0	69.1	130,551	524,526	15,130
Unlisted	TSEC	1993.04	Position Security	15,064	0	48.2	138,101	-	-	-	0	48.2	138,101	615,753	27,297
Unlisted	TSTC	2001.03	Position Security	10,813	0	90.0	260,092	-	-	-	0	90.0	260,092	579,435	(120,883)
Unlisted	SSET	2002.02	Position Security	6,009	0	100	41,182	-	-	-	0	100	41,182	41,077	(1,074)
Unlisted	SESC	2002.09	Position Security	5,471	0	73.7	34,028	-	-	-	0	73.7	34,028	995,499	51,745

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Ownership (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Ownership (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SSS	2001.01	Position Security	1,200	0	100	19,189	-	-	-	0	100	19,189	5,880,616	265,801
Unlisted	SSCR	2006.09	Position Security	3,405	0	100	9,332	-	-	-	0	100	9,332	45,272	2,516
Unlisted	TSLED	2012.04	Position Security	119,519	0	100	119,519	-	-	-	0	100	119,519	478,477	27,720
Unlisted	SCS	2012.09	Position Security	111,770	0	100	5,275,760	-	-	-	0	100	5,275,760	12,370,070	537,037
Unlisted	SSCX	2016.04	Position Security	1,141	0	100	1,141	-	-	-	0	100	1,141	2,091,092	53,160
Unlisted	SJC	1975.12	Position Security	273	1,560	100	253,108	-	-	-	1,560	100	253,108	1,218,011	3,923
Unlisted	SRJ	1992.08	Position Security	3,120	122	100	117,257	-	-	-	122	100	117,257	161,026	2,610
Unlisted	TSST Japan	2004.03	Business	1,639	30	49.0	0	-	-	-	30	49.0	0	226	(46)
Unlisted	Semiconductor Portal	2002.12	Business	38	0	1.2	10	-	-	-	0	1.2	10	2,142	59
Unlisted	Nanosys	2010.08	Business	4,774	1,747	1.3	2,387	-	-	-	1,747	1.3	2,387	19,705	(11,793)
Unlisted	One-Blue	2011.07	Business	1,766	0	16.7	1,766	-	-	-	0	16.7	1,766	30,238	650
Unlisted	TidalScale	2013.08	Business	1,112	2,882	4.3	1,112	-	-	-	2,882	4.3	1,112	4,507	(10,773)
Unlisted	Sentiance	2012.12	Business	3,422	7	7.2	3,422	-	-	-	7	7.2	3,422	5,516	(7,504)
Unlisted	Mantis Vision	2014.01	Business	1,594	355	2.1	1,980	-	-	-	355	2.1	1,980	31,758	(20,478)
Unlisted	Leman	2014.08	Business	1,019	17	3.4	1,019	-	-	-	17	3.4	1,019	1,681	(2,959)
Unlisted	Keyssa	2016.01	Business	3,332	1,235	1.9	3,332	-	-	-	1,235	1.9	3,332	8,400	(15,959)

Account	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Ownership (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Ownership (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	Zyomed	2016.01	Business	2,044	1,464	2.9	2,044	-	-	(2,044)	1,464	2.9	0	17,218	(690)
Unlisted	SensiFree	2016.01	Business	2,111	666	9.5	2,111	-	-	-	666	9.5	2,111	657	(2,407)
Unlisted	Unispectral	2016.02	Business	1,112	2,308	7.9	2,130	-	-	-	2,308	7.9	2,130	3,887	(3,828)
Unlisted	Quobyte	2016.04	Business	2,865	729	11.8	2,865	-	-	-	729	11.8	2,865	1,229	(772)
Unlisted	Afero	2016.05	Business	5,685	723	5.5	5,685	-	-	-	723	5.5	5,685	2,392	(11,917)
Unlisted	Graphcore	2016.06	Business	3,494	12,000	3.7	3,494	-	-	-	12,000	3.7	3,494	240,463	(98,055)
Unlisted	Soundhound	2016.12	Business	7,059	306	1.1	7,059	-	-	-	306	1.1	7,059	119,637	(38,507)
Unlisted	Aimotive	2017.12	Business	3,302	2	3.2	3,302	-	-	-	2	3.2	3,302	42,488	(8,610)
Unlisted	Fasetto	2019.01	Business	6,701	338	3.5	6,701	-	-	-	338	3.5	6,701	271,548	(14,256)

Based on separate financial statements.

Ownership percentage is calculated based on the number of common shares issued.

Financial stats of Sungwon Construction is as of December 31 2016, financial stats of Daewoo Songdo Development and Mantis Vision are as of December 31 2017, financial stats of Mantis Vision, SensiFree, Soundhound are as of December 31 2018, due to difficulties of obtaining the most recent financial data.

X. Related Party Transactions

1. Credit offerings for affiliates and subsidiaries

As of June 30, 2020, SEC provides a debt guarantee for financing of subsidiaries, including Samsung Electronics America, Inc. (SEA).

(USD thousand)

Company	Relationship	Creditor	Guarantee start date	Guarantee expiry date	Limit of Guarantee		Transactions			Interest Rate (%)
					Beginning of period	End of period	Beginning of period	Increase/decrease	End of period	
SEA	Subsidiary	BOA etc.	Nov 09, 2019	Jun 13, 2021	1,328,000	1,328,000	0	0	0	
SEM	Subsidiary	BBVA etc.	Aug 20, 2019	Jun 13, 2021	485,000	485,000	0	0	0	
SAMCOL	Subsidiary	Citibank etc.	Dec 17, 2019	Jun 13, 2021	180,000	230,000	89,718	(38,119)	51,599	6.0%
SEDA	Subsidiary	BRDESCO etc.	Oct 24, 2019	Dec 16, 2020	639,000	639,000	0	0	0	
SECH	Subsidiary	Santander etc.	Nov 09, 2019	Jun 13, 2021	142,000	142,000	17,256	52,192	69,448	0.7%
SEPR	Subsidiary	BBVA etc.	Nov 09, 2019	Jun 13, 2021	230,000	230,000	90,587	24,233	114,820	1.4%
SSA	Subsidiary	SCB etc.	Nov 09, 2019	Jun 13, 2021	318,000	318,000	0	0	0	
SEMAG	Subsidiary	SocGen etc.	Nov 09, 2019	Dec 16, 2020	110,000	110,000	0	0	0	
SETK	Subsidiary	BNP etc.	Nov 09, 2019	Jun 13, 2021	787,000	837,000	64,752	-228	64,524	7.4%
SECE	Subsidiary	Citibank etc.	Jul 19, 2019	Dec 16, 2020	75,698	75,609	0	0	0	
SEEG	Subsidiary	HSBC	Jun 14, 2020	Jun 13, 2021	85,000	85,000	0	0	0	
SEIN	Subsidiary	BNP etc.	Nov 09, 2019	Jun 13, 2021	145,000	145,000	0	0	0	
SJC	Subsidiary	Mizuho Bank etc.	Nov 09, 2019	May 31, 2021	896,633	901,016	0	0	0	
SEUC	Subsidiary	Credit Agricole etc.	Nov 09, 2019	Jun 13, 2021	150,000	150,000	0	0	0	
SEDAM	Subsidiary	Citibank etc.	Nov 09, 2019	Jun 13, 2021	322,000	222,000	0	0	0	
SECA	Subsidiary	BoA	Nov 09, 2019	Nov 08, 2020	70,000	70,000	0	0	0	
SELA	Subsidiary	Citibank	Dec 17, 2019	Dec 16, 2020	70,000	120,000	0	10,000	10,000	2.6%
SEEH	Subsidiary	HSBC etc.	Sep 06, 2019	Jun 13, 2021	703,000	594,000	0	0	0	
SERK	Subsidiary	SocGen etc.	Jul 13, 2019	Jun 13, 2021	220,000	220,000	0	0	0	
SELV	Subsidiary	Citibank	Dec 17, 2019	Dec 16, 2020	10,000	10,000	0	0	0	
SAPL	Subsidiary	BOA etc.	Nov 09, 2019	Jun 13, 2021	395,000	366,800	0	0	0	
SEV	Subsidiary	SCB	Nov 09, 2019	Jun 13, 2021	15,000	15,000	0	0	0	
SAVINA	Subsidiary	HSBC etc.	Nov 09, 2019	Jun 13, 2021	71,000	71,000	0	0	0	
SET	Subsidiary	SCB	Nov 09, 2019	Nov 08, 2020	30,000	30,000	0	0	0	
SEPCO	Subsidiary	HSBC etc.	May 05, 2020	Jun 13, 2021	-	87,200	0	18,090	18,090	2.8%
SCIC	Subsidiary	HSBC etc.	Nov 09, 2019	Dec 16, 2020	350,000	350,000	0	0	0	
SME	Subsidiary	SCB	Nov 09, 2019	Nov 08, 2020	110,000	110,000	0	0	0	
SAMEX	Subsidiary	Citibank	Dec 17, 2019	Dec 16, 2020	5,000	5,000	0	0	0	
SEASA	Subsidiary	Citibank	Dec 17, 2019	Dec 16, 2020	2,000	2,000	0	0	0	
SSAP	Subsidiary	SCB	Nov 09, 2019	Nov 08, 2020	30,000	30,000	0	0	0	
SEPM	Subsidiary	HSBC	Jun 14, 2020	Jun 13, 2021	35,000	35,000	0	0	0	
SESTAR	Subsidiary	HSBC	Jun 14, 2020	Jun 13, 2021	50,000	50,000	0	0	0	
AdGear Technologies Inc.	Subsidiary	BOA	Nov 09, 2019	Nov 08, 2020	2,000	2,000	0	0	0	
Harman International Industries, Inc.	Subsidiary	JP Morgan	Jun 14, 2020	Jun 13, 2021	100,000	100,000	0	0	0	
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Nov 09, 2019	Nov 08, 2020	25,000	25,000	0	0	0	
Harman RUS CIS LLC	Subsidiary	SocGen	Nov 09, 2019	Nov 08, 2020	15,000	15,000	0	0	0	
Harman Holding Limited	Subsidiary	HSBC	Jun 14, 2020	Jun 13, 2021	30,000	30,000	0	0	0	

Harman do Brasil Industria Eletronica e Participacoes Ltda.									
Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Nov 09, 2019	Nov 08, 2020	15,000	15,000	0	0	0
Total					8,246,331	8,250,625	262,313	66,168	328,481

Parent basis.

The approval decision is resolved by the Management Committee when the guarantee amount per transaction is between 0.1% and/or less than 2.5%, and by the Board of Directors when the guarantee amount per transaction is 2.5% and above.

SEC receives fees on the debt it guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc.

In 2019, the Company claimed approximately USD 238 thousand in guarantee fees and has received the total amount in 2020.

2. Acquisitions and disposals of assets with affiliates and subsidiaries

In the first half of 2020, the Company sold assets to affiliates including Samsung China Semiconductor LLC. (SCS) to increase production capacity of such affiliates. Also, the Company acquired assets including facility equipment from affiliates to improve efficiency of domestic production.

(KRW mil)

Company	Relationship	Transaction type	Transaction date ¹⁾	Asset	Purpose of transaction	Amount ²⁾	Gain or loss on disposal
SCS	Affiliates	Asset sale/purchase	Jun 10, 2020	Machinery, etc.	Enhance capacity and production efficiency	193,137	103,004
SAS	Affiliates	Asset sale	May 26, 2020	Machinery, etc.	Enhance capacity and production efficiency	62,423	62,423
SESS	Affiliates	Asset sale/purchase	Jun 18, 2020	Machinery, etc.	Enhance capacity and production efficiency	20,613	785
SEHZ	Affiliates	Asset purchase	May 27, 2020	Machinery, etc.	Enhance capacity and production efficiency	1,133	-
SEV	Affiliates	Asset sale/purchase	May 21, 2020	Machinery, etc.	Enhance capacity and production efficiency	1,026	1
Samsung SDI	Affiliates	Asset sale	Feb 19, 2020	Machinery, etc.	Enhance capacity and production efficiency	272	194
SEVT	Affiliates	Asset sale/purchase	Jun 2, 2020	Machinery, etc.	Enhance capacity and production efficiency	134	10

Parent basis; acquisitions and disposals of assets listed above are not subject to a resolution of the Board

¹⁾ Most recent transaction.

²⁾ Properly calculated by an appropriate method based upon market value assessment. Transaction was made under normal conditions (eg, terms of cash payment within the 15th, 30th of the following month of transaction).

3. Business Transactions with Affiliates and Subsidiaries

In 1H20, SEC conducted business transactions including sales and purchases with its subsidiaries, including Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT).

(KRW mil)

Company	Relationship	Type of transaction	Date	Details	Amount
SEVT	Affiliates	Sales, purchases, etc.	Jan-June 2020	HHPs	11,919,148
SEA	Affiliates	Sales, purchases, etc.	Jan-June 2020	HHPs and home appliances	11,441,360
SSI	Affiliates	Sales, purchases, etc.	Jan-June 2020	Semiconductors	9,939,850
SSS	Affiliates	Sales, purchases, etc.	Jan-June 2020	Semiconductors	9,919,636
SEV	Affiliates	Sales, purchases, etc.	Jan-June 2020	HHPs	8,067,851

Parent basis; transactions worth 5% and above of revenue of the previous business year are subject to public disclosure

4. Transactions with Stakeholders other than Affiliates and Subsidiaries

As of June 30, 2020, the Company's outstanding loan amount is KRW 120.914 billion related to support for supplier companies for product competitiveness and mutual development as well as home loan and educational expenses for employee welfare.

(KRW mil)

Company	Relationship	Loans			
		Account title	Transaction		
			Beginning of period (Jan 1, 2020)	Change	End of period (Jun 30, 2020)
Elentec Co., Ltd., etc.	Partner company and employee	Short-term loans	33,733	316	34,049
Bumjin I&D, etc.	Partner company and employee	Long-term loans	86,294	571	86,865
Total			120,027	887	120,914

Parent basis; amounts reflect the discounted present value of debts before accounting for impaired debts (impairment losses).

XI. Other information

1. Changes in public disclosure

- N/A

2. Results of shareholder meetings

[As of Jun 30, 2020]

Date	Agenda	Results
The 51st AGM (Mar 18, 2020)	1. Approval of Balance Sheet, Income Statement, and Statement of Appropriation of Retained Earnings (draft), etc. for 2019 2. Appointment of Executive Directors 2.1: Jong-hee Han 2.2: Yoon-ho Choi 3. Approval of remuneration limit for Directors	Approved Approved Approved Approved
The 50th AGM (Mar 20, 2019)	1. Approval of Balance Sheet, Income Statement, and Statement of Appropriation of Retained Earnings (draft), etc. for 2018 2. Appointment of Directors/Committee Members 2.1: Independent Directors 2.1.1: Jae-wan Bahk 2.1.2: Han-jo Kim 2.1.3: Curie Ahn 2.2: Audit Committee 2.2.1: Jae-wan Bahk 2.2.2: Han-jo Kim 3. Approval of remuneration limit for Directors	Approved Approved Approved Approved Approved Approved
The 49th AGM (Mar 23, 2018)	1. Approval of Balance Sheet, Income Statement, and Statement of Appropriation of Retained Earnings (draft), etc. for 2017 2. Appointment of Directors/Committee Members 2.1: Independent Directors 2.1.1: Jeong Kim 2.1.2: Sun-uk Kim 2.1.3: Byung-gook Park 2.2: Executive Directors 2.2.1: Sang-hoon Lee 2.2.2: Ki-nam Kim 2.2.3: Hyun-suk Kim 2.2.4: Dong-jin Koh 2.3: Audit Committee (Sun-uk Kim) 3. Approval of remuneration limit for Directors 4. Approval of a stock split and amendments to relevant Articles of Incorporation	Approved Approved Approved Approved Approved Approved Approved Approved Approved

3. Litigation

The Company is involved in various claims, disputes, and investigations conducted by regulatory bodies, which arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, as of the reporting date, the Company believes the outcome will not have a material impact on the financial position of the Company.

4. Guarantees

- Domestic: Not applicable
- Overseas:

(USD thousand)

Company	Relationship	Creditor	Guarantee	Transactions				Limit of guarantee
			Expiry date	Beginning of period	Increase	Decrease	End of period	
SEA	Subsidiary	BOA etc.	13-Jun-21	-	-	-	-	1,328,000
SEM	Subsidiary	BBVA etc.	13-Jun-21	-	-	-	-	485,000
SAMCOL	Subsidiary	Citibank etc.	13-Jun-21	89,718	-	(38,119)	51,599	230,000
SEDA	Subsidiary	BRADESCO etc.	16-Dec-20	-	-	-	-	639,000
SECH	Subsidiary	Santander etc.	13-Jun-21	17,256	52,192	-	69,448	142,000
SEPR	Subsidiary	BBVA etc.	13-Jun-21	90,587	24,233	-	114,820	230,000
SSA	Subsidiary	SCB etc.	13-Jun-21	-	-	-	-	318,000
SEMAG	Subsidiary	SocGen etc.	16-Dec-20	-	-	-	-	110,000
SETK	Subsidiary	BNP etc.	13-Jun-21	64,752	-	(228)	64,524	837,000
SECE	Subsidiary	Citibank etc.	16-Dec-20	-	-	-	-	75,609
SEEG	Subsidiary	HSBC	13-Jun-21	-	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	13-Jun-21	-	-	-	-	145,000
SJC	Subsidiary	Mizuho etc.	31-May-21	-	-	-	-	901,016
SEUC	Subsidiary	Credit Agricole etc.	13-Jun-21	-	-	-	-	150,000
SEDAM	Subsidiary	Citibank etc.	13-Jun-21	-	-	-	-	222,000
SECA	Subsidiary	BOA	08-Nov-20	-	-	-	-	70,000
SELA	Subsidiary	Citibank	16-Dec-20	-	10,000	-	10,000	120,000
SEEH	Subsidiary	HSBC etc.	13-Jun-21	-	-	-	-	594,000
SERK	Subsidiary	SocGen etc.	13-Jun-21	-	-	-	-	220,000
SELV	Subsidiary	Citibank	16-Dec-20	-	-	-	-	10,000
SAPL	Subsidiary	BOA etc.	13-Jun-21	-	-	-	-	366,800
SEV	Subsidiary	SCB	13-Jun-21	-	-	-	-	15,000
SAVINA	Subsidiary	HSBC etc.	13-Jun-21	-	-	-	-	71,000
SET	Subsidiary	SCB	08-Nov-20	-	-	-	-	30,000
SEPCO	Subsidiary	HSBC etc.	13-Jun-21	-	18,090	-	18,090	87,200
SCIC	Subsidiary	HSBC etc.	16-Dec-20	-	-	-	-	350,000
SME	Subsidiary	SCB	08-Nov-20	-	-	-	-	110,000
SAMEX	Subsidiary	Citibank	16-Dec-20	-	-	-	-	5,000
SEASA	Subsidiary	Citibank	16-Dec-20	-	-	-	-	2,000
SSAP	Subsidiary	SCB	08-Nov-20	-	-	-	-	30,000
SEPM	Subsidiary	HSBC	13-Jun-21	-	-	-	-	35,000
SESAR	Subsidiary	HSBC	13-Jun-21	-	-	-	-	50,000
AdGear Technologies Inc.	Subsidiary	BOA	08-Nov-20	-	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	13-Jun-21	-	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	08-Nov-20	-	-	-	-	25,000
Harman RUS CIS LLC	Subsidiary	SocGen	08-Nov-20	-	-	-	-	15,000
Harman Holding Limited	Subsidiary	HSBC	13-Jun-21	-	-	-	-	30,000
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	08-Nov-20	-	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Subsidiary							
Harman Finance International, SCA	Subsidiary	JP Morgan etc.	27-May-22	392,210	1,367	-	393,577	393,577
SDN	Subsidiary	SIEL	17-Feb-23	-	13,200	-	13,200	462,000
Total				654,523	119,082	(38,347)	735,258	9,106,202

Information above are prepared in consolidated basis. Debt guarantees for Harman Finance International, SCA, and SDN are provided by Harman International Industries, Inc. and Samsung Display Co., Ltd., respectively.

SEC requires Board approval for individual guarantees exceeding 2.5% of total equity. When the guarantee amount is between 0.1% and/or less than 2.5%, the approval decision is delegated to the Management Committee. Debt guarantees provided to SDN during the six month period ended June 30, 2020 were approved by Board of Samsung Display Co., Ltd.

SEC claims fees on the debt guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc. In 2019, the Company claimed approximately USD 238,000 as guarantee fee and, as of the reporting date, has collected the amount.

5. Sanctions and others

Pursuant to the results of a Process Safety Management (PSM) inspection on the Pyeongtaek site by the Ministry of Employment and Labor conducted from June 20 through June 22, 2018, the Company was ordered to pay a fine of KRW 6 million for violating Article 49-2 (7) of the former Occupational Safety and Health Act (Submission of Process Safety Reports) on June 25, 2018 and has subsequently paid the fine.

Pursuant to the results of a the 2nd Process Safety Management (PSM) inspection on the Pyeongtaek site (P1-2) by the Ministry of Employment and Labor over September 10 through September 13, 2018, the Company was ordered to pay a fine of KRW 10 million for violating Article 48 (1) of the former Occupational Safety and Health Act (Submission of hazard prevention and risk control plan) on January 3, 2019 and has subsequently paid the fine.

Pursuant to the results of a Process Safety Management (PSM) inspection on the Onyang site by the Ministry of Employment and Labor on February 19, 2020, the Company was ordered to pay a fine of KRW 200 thousand for violating Article 46 (1) of the Occupational Safety and Health Act on February 25, 2020 and has subsequently paid the fine. Pursuant to the results of a Process Safety Management (PSM) inspection on the Cheonan site by the Ministry of Employment and Labor from May 26–28, 2020, the Company was ordered to pay a fine of KRW 900 thousand for violating Article 46 (1) of the Occupational Safety and Health Act and has subsequently paid the fine in July.

In order to comply with relevant laws, the Company established a PSM innovation organization and a PSM management system which manages activities related to approval, design, 12 key tasks, expertise improvement, etc. We also foster on-site process safety experts and conduct voluntary process safety evaluation.

With regards to CO₂ leak accident at the Gi-heung plant on September 4, 2018, pursuant to the results of a special investigation by the Ministry of Employment and Labor conducted from October 10 through November 9, 2018, the Company was ordered to pay a fine of KRW 515 million for violating Article 36-1 and 36-4 of the former Occupational Safety and Health Act on November 16, 2018 and has subsequently paid the fine. On February 14, 2020, the Company was ordered to pay a fine of KRW 7 million and an executive (Executive Vice President P, health & safety chief officer; 27 years of service) was ordered to pay a fine of KRW 5 million for violating Article 23 (Safety Measures), 24 (Health Measures), 29 (Safety and Health Measures When Conducting Contracted Projects), etc. The fines were subsequently paid.

The Company was also fined KRW 2 million by the Yong-in Fire Station for violating Article 20-7 of the Act On Fire Prevention And Installation, Maintenance, And Safety Control Of Fire-Fighting Systems on November 28, 2018 and a fine of KRW 2 million for violating Article 25-2 of the same act on December 12, 2018, and has subsequently paid the fines.

Pursuant to the results of a special investigation by the Yong-in Fire Station conducted from November 27 through December 6, 2018, the Company was ordered to pay a fine of KRW 0.5 million for violating Article 20-6 of the Occupational Safety and Health Act on January 18, 2019 and has subsequently paid the fine.

The Company was fined KRW 1 million on October 23, 2018, as two of our paramedics (years of service: 11, 5) violated Article 49 of the Emergency Medical Service Act and has subsequently paid the fine. The Company was also fined KRW 0.5 million on the same date as one of our employees (years of service: 6) violated Article 20-6 of the Act on Fire Prevention and Installation, Maintenance, And Safety Control Of Fire-Fighting Systems, and has subsequently paid the fine.

To prevent recurrence and strengthen compliance, the Company has built a legal safety assessment evaluation system and conducts regular assessment.

On November 28, 2019, following the investigation on MSDS warning signs compliance at Gwang-ju office by the Ministry of Employment and Labor, the Company was ordered to pay a fine of KRW 1.4 million for violating Article 41 Paragraph 3 (Preparation, Keeping, etc. of Material Safety Data Sheets) of Occupational Safety and Health Act, and has subsequently paid the fine. We conducted a company-wide investigation on the handling space of chemical substances and implemented relevant improvement measures. In addition, we are improving the prior evaluation process on new G-EHS chemical substances and providing education for supervisors in departments handling chemical substances. Regarding the industrial incident at Gwangju site on May 19, 2020, the Company delayed the submission of industrial accident questionnaire to the Gwangju Regional Employment and Labor Administration and as a result was ordered to pay a fine of

KRW 7 million for violating Article 57 (3) of Occupational Safety and Health Act on June 26, 2020, and has subsequently paid the fine in July.

To prevent the recurrence and strengthen compliance, the Company has provided special education for the on-site environment and safety managers and supervisors.

With regards to an optic cable auction by SK Broadband on May 2009 and November 2010, the Company was subject to a correction order and ordered to pay a fine of KRW 520 million for violating Restrictions on Improper Concerted Acts in accordance with Article 19 (Paragraph 1.3 and 1.8) of Monopoly Regulation and Fair Trade Act on February 6, 2018 and has subsequently paid the fine.

On October 4, 2018 the Company was subject to a correction order and ordered to pay a fine of KRW 488 million for violating the Prohibition, etc. against Unfair Labeling or Advertising in accordance with Article 3 (Paragraph 1.2) of Act on Fair Labeling and Advertising and Article 3 (Paragraph 2) of the Enforcement Decree Of The Act On Fair Labeling And Advertising and has subsequently paid the fine. The Company is currently in litigation to cancel the order.

Regarding matters related to Milk Music, on August 23, 2019, the Company was subject to correction measures and ordered to pay a fine of KRW 0.5 million by the Fair Trade Commission for violating Duty to Provide Online Completion Service in accordance to Article 5 Paragraph 4 and Cybermall Operators' Indication Duty in accordance to Article 10 Paragraph 1 of the Act on the Consumer Protection in Electronic Commerce, etc.; and the Company subsequently paid the fine. To ensure compliance with relevant regulations, the Company has strengthened internal management standard and provides preventive education to employees to prevent unfair trade practices and advertising.

The Fair Trade Commission filed a complaint against Chairman Kun-hee Lee on November 21, 2018 for omitting Samoo Architects & Engineers and Seoyoung Engineering from Samsung affiliates when submitting required materials in 2014 under Article 14-4 of the Monopoly Regulation and Fair Trade Act. The prosecution filed a summary indictment and Chairman Kun-hee Lee was ordered to pay a fine of KRW 100 million by the Seoul Central District Court on April 18, 2019, and the fine was subsequently paid.

Special prosecutor investigating an influence-peddling scandal involving South Korea's president has indicted five of the Company's executives (Jae-yong Lee, Vice Chairman, Gee-sung Choi, former Vice Chairman, Choong-ki Chang, former President, Sang-jin Park, former President, and Seong-soo Hwang, former Senior Vice President) on allegations of violating the Act on the Aggravated Punishment, etc. of Specific Economic Crimes (embezzlement) on February 28, 2017. The Seoul Central District Court found them partially guilty on the charges on August 25, 2017, and sentenced Vice Chairman Jae-yong Lee to five years in jail, former Vice Chairman Gee-sung Choi to four years in jail, former President Choong-ki Chang to four years in jail. Former President Sang-jin Park received a three-year jail term, suspended for five years, and former Senior Vice President Seong-soo Hwang was sentenced to two and a half years, suspended for four years. On February 5, 2018, the Seoul High Court reversed the first trial judgment and Vice Chairman Jae-yong Lee was suspended for four years and former Vice Chairman Gee-sung Choi, former President Choong-ki Chang, former President Sang-jin Park, and former Senior Vice President Seong-soo Hwang were suspended for two years each.

On August 29, 2019, the Supreme Court rejected part of the lower court's ruling on bribery and violation of the Act on the Aggravated Punishment (embezzlement), and ordered a retrial to the Seoul High Court.

A retrial is currently in process, and the Company will check on future developments of the court proceedings and relevant matters.

The Seoul High Court on August 10, 2020, regarding violations of Article 81 and 90, etc. of the Trade Union and Labor Relations Adjustment Act by employees of SEC and Samsung Electronics Service, overturned part of the initial ruling by the Seoul Central District Court. The Seoul High Court ordered prison terms for: Company's Executive Vice President A (28 service years) of 1 year and 4 months, former Executive Vice President B of 1 year and 2 months and a 2-year suspended sentence, Executive Vice President C (34 service years) of 10 months and a 2-year suspended sentence, former Executive Vice President D of 1 year and a 2-year suspended sentence, Senior Vice President E (32 service years) of 1 year, Senior Vice President F (24 service years) of 1 year and 2 months and a 2-year suspended sentence; Vice President G (27 service years) of 10 months and a 2-year suspended sentence, Vice President H (17 service years) of 10 months and a 2-year suspended sentence. Samsung Electronics Service was ordered to pay a fine of KRW 50 million and prison terms for: former CEO (4 service years) 1 year and 4 months, Senior Vice president I (10 service years) of 1 year, Vice President J (21 service years) of 10 months and a 2-year suspended sentence. SEC and former SEC Chairman of the Board (38 service years) were pronounced innocent.

On December 9, 2019, the Seoul Central District Court ruled on allegations that an SEC executive ordered executives and employees of Samsung Biologics and Samsung Bioepis to hide/destroy evidence related to the alleged fraudulent accounting. For violating Article 30, 31-1, and 155-1 of the Criminal Act, Executive Vice President K (27 service years) was sentenced to 1 years and 6 months in prison; Executive Vice President L (31 service years) was sentenced to 1 year and 6 months in prison and a 3-year suspended sentence; Executive Vice President M (9 service years) was sentenced to 2 years in prison; Vice President N (16 service years) was sentenced to 1 year and 6 months in prison and a 3-year suspended sentence; Vice President O (10 service years) was sentenced to 1 year and 6 months in prison and a 3-year suspended sentence.

The appeal against the decision has been filed. The Company will check on future developments of the court proceedings and relevant matters.

The Company (including Samsung Display) has joint responsibility for reimbursement of liabilities that Samsung Display accrued before the separation.

For information on the Company's commitments and contingencies, refer to 'notes on consolidated financial statements and notes on financial statements of III. Financial Affairs.

6. Return of short-swing profits

In the first half of 2020, The Company has not received any notification of short-swing profits from the Securities & Futures Commission.

7. Use of Direct Financing Fund

N/A

8. External Contributions

Contribution	Amount	Details	Date of Board approval
Management plans for the Social Contribution Fund for 2018	KRW 12.21 billion	- The Social Contribution Fund consists of voluntary contributions of employees and matching funds raised by SEC. SEC plans to contribute KRW 12.21 billion in matching funds in 2018. - The contribution will be used for domestic and overseas volunteer programs as well as and local social contribution activities.	January 31, 2018
Samsung Dream Scholarship Foundation	KRW 1.12 billion	- The contribution was made to support education of low-income high school students.	
Donation to Chung-nam Samsung Institute	KRW 2.742 billion	- The contribution was made to improve education of the region.	February 23, 2018
Donation of Electronics to celebrate Samsung's 80th anniversary	Approximately KRW 7.5 billion	- Electronics were donated to about 1,500 social welfare centers to celebrate the 80th anniversary of Samsung.	March 23, 2018
Samsung Welfare Foundation	KRW 19.5 billion	- The contribution was made to support education of low-income middle school students.	April 26, 2018
Samsung Life Public Welfare Foundation	KRW 41.5 billion	- The contribution was made to support the Samsung Medical Center.	
Ho-Am Foundation	KRW 4.0 billion	- The contribution was made to support the Foundation's activities such as the Ho-Am Award.	
Sungkyunkwan University	KRW 15.0 billion	- The contribution was made to support Samsung Scholarship.	

Contribution	Amount	Details	Date of Board approval
Smart Factory	KRW 60.0 billion	- The contribution was made to support small- and mid-sized enterprises strengthen manufacturing competitiveness, foster talent, and achieve sustainable growth.	July 31, 2018
Samsung Software Academy For Youth	KRW 499.6 billion	- The contribution was made to provide quality software education and support job seekers foster capabilities expected by companies. (Date: Dec 2018–Jun 2024)	October 31, 2018
Donation to Heemang 2019 Nanum Campaign	KRW 25.2 billion	- The contribution was made to Community Chest of Korea to fulfill corporate social responsibilities and help the marginalized.	November 30, 2018
Performance incentive to secondary suppliers of the DS division	Approximately KRW 4.32 billion	- The contribution was provided to 89 suppliers of the DS division to prevent work accidents, improve productivity, and promote co-prosperity of the Company and its partner companies.	
Management plans for Social Contribution Fund for 2019	KRW 11.73 billion	- The Social Contribution Fund consists of voluntary contributions of employees and matching funds raised by SEC. SEC plans to contribute KRW 11.73 billion in matching funds for 2019. - The contribution will be used for domestic and overseas volunteer programs as well as and local social contribution activities.	January 31, 2019
Samsung Dream Scholarship Foundation	KRW 1.12 billion	- The contribution was made to support education of low-income high school students.	February 26, 2019
Sponsoring the WorldSkills Competition	EUR 1.5 million (approximately KRW 1.95 billion)	- The contribution was made to support the Organizing Committee of WorldSkills International in WordSkills Kazan 2019 as the top sponsor.	
Donation to Chung-nam Samsung Institute	KRW 2.991 billion	- The contribution was made to improve education of the region.	
Contribution to the Korea Occupational Safety & Health Agency	KRW 31.0 billion	- The fund is for building an electronics industry health and safety center and establishing health and safety infrastructure.	April 30, 2019
Performance incentive to suppliers of the DS division	KRW 77.45 billion	- The contribution was provided to 296 primary and secondary suppliers of the DS division to prevent work accidents, improve productivity, and promote co-prosperity of the Company and its partner companies.	
Financial support for startup program at Daegu, Gyeongbuk Creative Innovation Center	KRW 12.0 billion	- Vitalize startup ecosystem and contribute to job creation to nurture startups in Korea - Donation to Daegu Gyeongbuk University Start-up ※ Daegu Gyeongbuk University Start-up established a fund with the donation from Samsung Electronics.	July 31, 2019
Donation to Heemang 2020 Nanum Campaign	KRW 31.0 billion	- The contribution was made to Community Chest of Korea to fulfill corporate social responsibilities and help the marginalized.	November 29, 2019
Samsung Dream Scholarship Foundation	KRW 1.12 billion	- The contribution was made to support education of low-income high school students.	January 30, 2020
Management plans for Social Contribution Fund for 2020	KRW 11.89 billion	- The Social Contribution Fund consists of voluntary contributions of employees and matching funds raised by SEC. SEC plans to contribute KRW 11.89 billion in matching funds for 2020. - The contribution was made to support adolescent education	February 21, 2020
Donation to Chung-nam Samsung Institute	KRW 2.576 billion	- The contribution was made to improve education of the region.	
Donation to support	KRW 23.0 billion	- The contribution was made to support emergency relief measures	February 26, 2020

Contribution	Amount	Details	Date of Board approval
emergency relief related to COVID-19		for persons and communities impacted by COVID-19.	
Donation to Samsung Welfare Foundation, etc.	KRW 51.8 billion	<ul style="list-style-type: none"> - Operates Dream Class, a program to support learning for underprivileged middle school students (Samsung Welfare Foundation) - Support for facilities and research infrastructure at Samsung Medical Center, support research for MERS vaccine development (Samsung Life Public Welfare Foundation) - Support legal expenses for faculty members and Samsung scholarship for students (Sungkyunkwan University) 	April 29, 2020
Performance incentive to suppliers of the DS division	Approximately KRW 62.0 billion	<ul style="list-style-type: none"> - To prevent safety incidents at sites, enhance productivity, and promote co-growth with suppliers - For the first and secondary suppliers of the DS division stationed at the sites 	
Ho-Am Foundation	KRW 4.1 billion	- To award those with significant contributions in the field of academia, art, and human welfare	May 27, 2020

External contributions are based on a resolution of the Board.

9. Subsequent events

N/A

10. Acquisition and divestments

The major divestment and transfer of business transactions in the past three business years on a parent basis (separate basis) are as follows. For information on the business combinations and divestitures of subsidiaries, please refer to the notes on the business combination and assets held for sale (assets of disposal group) of the consolidated financial statements.

[PLP Business]

(1) Details of acquisition

In accordance to the resolution of the Board of Directors on April 30, 2019, the Company acquired PLP business from Samsung Electro-Mechanics Co., Ltd.(location: South Korea; CEO: Yun Tae Lee) at a price of KRW 785,000 million on June 1, 2019 to strengthen its semiconductor competitiveness through securing next-generation packaging technology.

Details of the above statement can be found in the “Business Acquisition from Related Parties”, published in DART (<http://dart.fss.or.kr/>) on April 30, 2019.

	Account	Forecast		Actual			
		1st Year	2nd Year	1st Year		2nd Year	
				Actual	Difference	Actual	Difference
PLP Business	Sales	101	219	-	-	-	-
	Operating Income	(1,273)	(2,155)	(1,095)	14%	(107)	-
	Net Income	(1,273)	(2,155)	(1,095)	14%	(107)	-

Actual operating income and net income for the first year of acquisition differs by 14% from the forecast due to several factors such as reduction in wages.

Actual figures for the second year of acquisition is result for the six month period ended June 30, 2020, and its difference with the forecast will be disclosed in the Annual business report for the year ending December 31, 2020.

No third-party sales is recognized from PLP business as its products are internally transferred within the Company's manufacturing process.

11. Green management

The Company is actively securing "Designation of Green Enterprise" and "Green Technology Certifications" to follow the Low Carbon Green Growth policy of the Korean government. In particular, greenhouse gas emission and energy consumption generated at our operations are reported to the government, required by relevant law. Also, relevant information are provided transparently to stakeholders through the Sustainability Report, etc.

(Designation of Green Enterprise)

The Company strives to fulfill its responsibility as an eco-friendly enterprise by reducing pollutants, conserving resources and energy, establishing/utilizing a green management system, etc. Our business sites in Suwon, Giheung, and Hwasung have been designated as green enterprises in accordance with Article 16-2 (Designation, etc. of Green Enterprise) of the Support for Environmental Technology and Environmental Industry Act.

(Green Technology Certification)

The Company is acquiring Green Technology Certifications in accordance with Paragraph 2, Article 32 (Standardization and Certification and Green Technology Green Industries) of the Framework Act on Low Carbon Green Growth. Green technology development is a part of our "Planet First" strategy, which strives to conduct business activities in a manner that respect people and nature. Since the certification system was introduced in 2010, the Company has secured 11 valid Green Technology Certifications as of June 30, 2020. In addition, the Company has acquired 'Green Technology' product certificates for 228 models of commercialized products.

Certified Green Technologies as of June 30, 2020 are as follows:

Division	Certified Green Technologies	No.
CE	Technology to: 1) enhance energy efficiency of dryers using high-efficiency heat pump and heat exchanger; and 2) reduce stand-by power use by monitors etc.	10
IM	Power reduction technology for wireless LAN based on user patterns, etc.	1
Total		11

Parent basis.

(Greenhouse gas emission and energy consumption management)

The Company is a “controlled entity” according to Article 42 (Coping with Climate Change and Management of Targets for Energy), Paragraph 6 of Korea’s “Framework Act on Low Carbon, Green Growth.” Thus, the Company has been reporting the amount of greenhouse gas emission and energy consumption, verified by a third-party, to the authorities and disclosing it to stakeholders according to Article 44 (Reporting on Quantity of Greenhouse Gases Emitted and Quantity of Energy Consumed) of the same Act since May 2011.

The reported amount of greenhouse gas emission and energy use on a parent basis are provided below:

(Unit: tCO₂-eq, TJ)

	2019	2018	2017
Greenhouse gas (tCO ₂ -eq)	11,194,122	10,782,443	8,630,628
Energy (TJ)	161,154	153,681	130,834

Domestic manufacturing facilities, office buildings, buildings owned by the Company, leased buildings, etc.

Reported Greenhouse gas emission excludes ozone depletion substances (ODS).

Amounts may differ by third-party organization verification results.

Data for 2018 and 2017 are restated as per revision of 『Guideline for Emission Reporting and Certification in Greenhouse Gas Emission Trading Scheme』 .

From 2015, in accordance with the Article 8 (Designation of Business Entities Eligible for Allocation) of the Act on the Allocation and Trading of Greenhouse-Gas Emission Permits, the Company is an eligible business entity under the Act.